

ARMED FORCES

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ARMY NAVY AIR FORCE

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COAST GUARD

MARSHALS

MANAGEMENT



Feature

*Saving Lives and the
Taxpayers' Dollars*
by Admiral
Alfred C. Richmond

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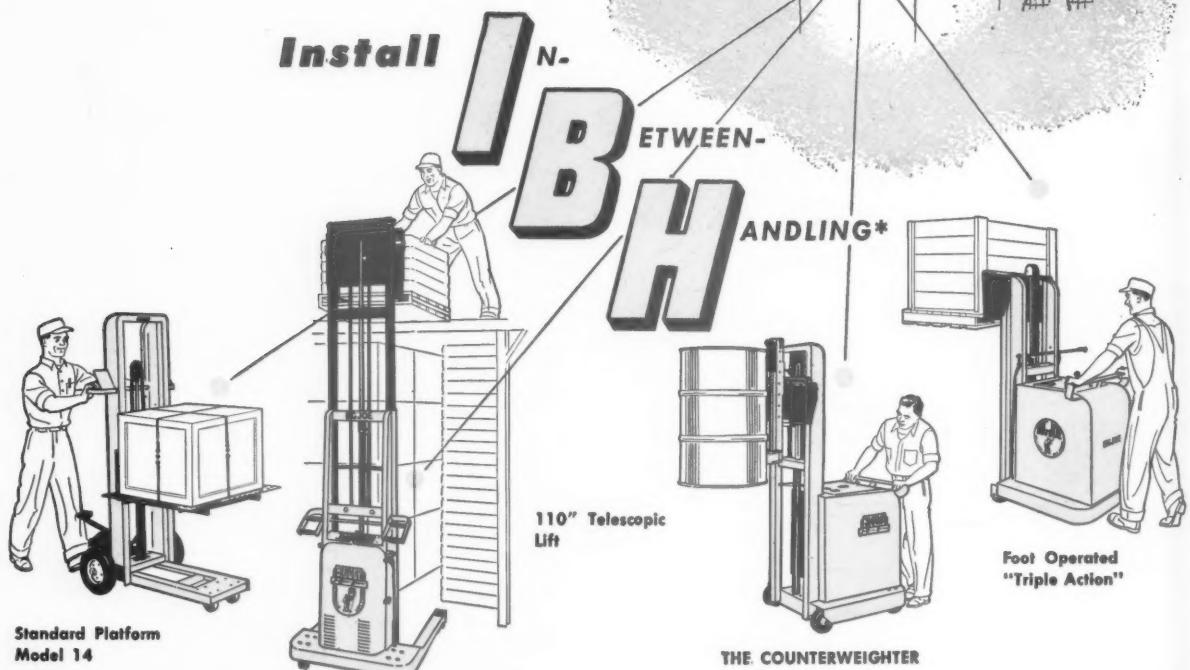
On The Cover

A graduate of the Coast Guard Academy in 1924, Admiral Richmond has outstanding record as admiral-in-chief, serving at both coasts during World War II before rising to the rank of Coast Guard Commandant.

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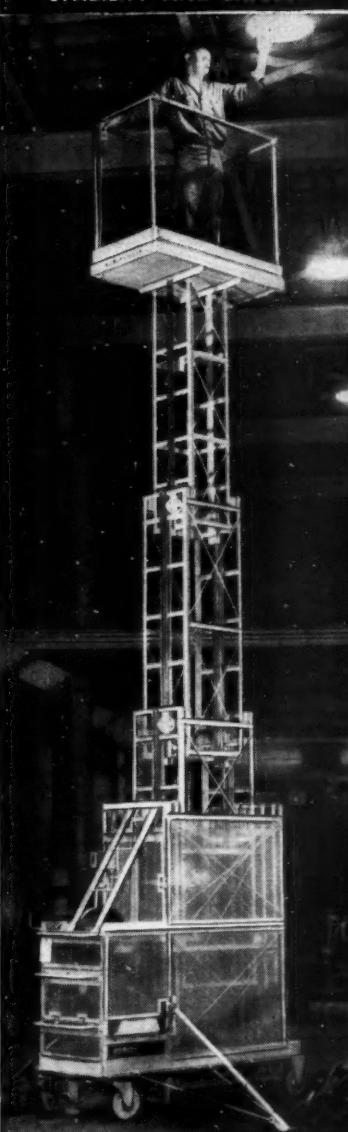
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The Author

Saving Lives and the Taxpayers' Dollars

—Two of Many Coast Guard Missions

By

Vice Admiral Alfred C. Richmond
Commandant, U. S. Coast Guard

THE launching of "Armed Forces Management" is significant to me as evidence of the warm concern of all the Services in the welfare of the taxpayer. And I appreciate this opportunity to state that management improvement will continue to be one of our primary goals at all levels of command.

To understand today's management job in the Coast Guard requires some acquaintance with its historical development and its present manifold duties. Starting as the Revenue Cutter Service in 1790, under the Treasury Department, it became the Coast Guard in 1915, when it was joined with the Life Saving Service. Then, in rapid succession, the Lighthouse Service, in 1939, and the Bureau of Marine Inspection and Navigation, 1942, were brought into the consolidation. It is important to keep in mind that an expectation of over-all economy was a major factor behind the aforesaid consolidation.

Each of these component services had an organization specially geared to its distinctive mission. While the reorganizing process was underway, World War II, with its impact of rapid expansion and technological development, absorbed our attention. Along with other concerns, the mushrooming trans-ocean air traffic brought new duties in manning of ocean station vessels and, later, long range electronic aids to navigation (loran) stations. Following the war, like the other Services, we suffered the disruption of demobilization. It has been only since 1949, with Congressional direction, that the present pattern of Coast Guard responsibilities has been somewhat stabilized and that our management has been able to orient itself to its most economical execution.

Today, the more important Coast Guard statutory duties include maritime safety and law enforcement, search and rescue, aids to navigation, and readiness to serve as a part of the Navy in emergency. In carrying out these missions we operate many hundreds of small and widespread units. The task of supporting these units is especially complex for those in remote and isolated sites, such as the loran stations in Alaska and the far Pacific islands. Furthermore, although most Coast Guard units are small, the majority serve several purposes. For example, a lifeboat station which is primarily for rescue purposes may also service nearby

aids to navigation. Accordingly, most of our units require a wide range of highly technical equipment with accompanying difficult burden of training and maintenance.

Against the background thus outlined, I have always felt that the attitude of top management in the Coast Guard has been to "get the job done." I hope we always maintain this viewpoint. Admittedly, in a small organization, personal direction and observation could assure capable and efficient performance. However, be that as it may, our growth prior to World War II had already made us feel the need for special management devices and skills. In demonstration of this awareness, in 1935, a partial system of cost accounting was set up, and, in 1939, the post-graduate training of officers was extended to the area of business administration. The need for a revolving fund for better control of inventories brought Congressional authorization for it in 1941.

However, the most striking changes have occurred since 1947 following a management survey specially authorized by the Congress. As a direct result of the recommendations made, and with the helpful co-operation of the General Accounting Office and the Bureau of the Budget, the Coast Guard developed and installed an accounting system which covers all the cost elements in its operations. The system is decentralized, with financial control and accounting paralleling operating responsibilities. Using data taken directly from the accounts, we are producing frequent financial reports which facilitate management's comparison of results as measured against our plans. Furthermore, we have succeeded in tying in our budget presentation so that requirements are stated in direct relation to actual costs.

In another important field, the survey recommendations pointed up the need for an integrated supply management program, including effective control of inventories. A plan for supply support activities was developed on a minimum need basis and with the Navy Department agreeing to furnish a large portion of our replenishable needs covering common items. It should be noted that this plan formalized a long tradition of Navy support stemming from our close

(Continued on page 23)



The Author

ON June 12, 1824, the Governor of Massachusetts signed a bill incorporating the Plymouth Cordage Company with an initial investment of \$20,000. The Company, now in its 131st year, has outlasted every concern whose bonds or shares were then listed with the Boston Stock Exchange. There has never been a corporate reorganization and no issue of any security other than common stock. Some dividend has been paid in every year since 1832 except for three years, the last of which was 1857.

Many of the early employees were young men apprentices who, in accordance with the custom of the times, contracted as a condition of employment: "to serve the master well and faithfully, keep his secrets, his lawful commands to obey, to not frequent ale houses or taverns, play cards or dice, contract matrimony or commit acts of vice and immorality." When these young men reached the age of 21, they were entitled to a regular job in the mill.

The hours of work in the very early days of the Company were from sun to sun, and pay was the same for a short as for a long day. The earliest wages ranged from 85 cents to \$1.16 a day which, in the light of today's living costs, seem terribly inadequate. However, in those days it was possible for a family to rent a four-room tenement from the Company for \$1.00 a week, buy pork for eight cents a pound, butter for 19 cents a pound, molasses for 45 cents and New England rum for 48 cents a gallon.

Within 6 months after beginning operations, the Company was employing 50 hands, and after about

Modern Management Techniques As Applied in a 130-year Old Company

By Edwin G. Roos, President
Plymouth Cordage Company

one year's operation, the Company was producing approximately 50,000 lbs. per month, which was sold for approximately 10 cents per lb.

From that humble beginning, operating through three great wars, five major depressions, sundry financial panics, and innumerable price wars, having successfully resisted an attempt in the 1880's by a monopolistic trust to absorb it, the Company is today the largest producer of hard fiber cordage in the world.

While a review of that early history of the Plymouth Cordage Company reveals little of modern management techniques, we do find much of the basis of progressive modern management concepts. We are disposed, consequently, to look back, not distainfully at the "horse and buggy" methods, but rather, to the wealth of background material which furnishes a firm foundation to which we can apply modern management techniques.

Similarly, I feel sure that you, who now have the great responsibility for the efficient operation of our Armed Services in these critical times, can find equally interesting, inspiring, and guiding background material in the long and honored history of the Service with which you are connected.

Modern Techniques Maintain Historical Quality

We find in the Company's history an inspiring concept of quality from the very beginning. Efficient production and high quality have been faithfully maintained. Typical is the experience during the early 1880s when the "National Cordage Company" popularly known as the

"Cordage Trust" attempted to combine all cordage manufacturers into a monopolistic, super-company. Plymouth resisted and promptly encountered what appeared to be a corner on the fiber market. This attempt by the "Trust" was not of itself successful, but it did cause a potentially ruinous, fluctuating fiber market with subsequent cutthroat competition on finished products. Both these developments hit Plymouth hard.

At the same time the "Trust" was doing everything possible to force Plymouth into the combine. Plymouth's future appeared grim, and then it was discovered that the "Trust" had acquired a substantial portion of Plymouth stock. Fortunately, the Plymouth Directors quickly convinced the remaining stockholders that their best interests would be served by not selling their shares at any price, but rather, by placing their stock in the hands of friendly voting trustees, and the day was saved.

However, during that trying experience, when the Company was fighting for its very life under conditions that might have tempted some managements to employ temporary cost savings in the form of cheaper quality, Plymouth's management continued faithful to its concept of high quality.

That concept of never tampering with quality has since been instilled in the minds and hearts of all Plymouth employees. Today the Company maintains the most modern and efficiently staffed Cordage Research Laboratory in existence. Its Engineering Staff is manned by competent, trained and experienced personnel. Its search for new prod-

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ucts, new uses for old products, and improved performance of present products, is constant. The management strictly adheres to a policy of replacement and improvement designed to keep our plants equipped with the latest and most efficient machinery. In jealously guarding that early concept of high quality, every recognized modern technique is employed today.

Modern Personnel Techniques Maintain Stable Employer-Employee Relations

We find, in the Company's history, a basic concept for fair dealing between management and employees. Techniques used to effect that concept have changed over the years, but fundamentally the employer-employee relationship has continued to be one of stability and loyalty on the part of both parties to each other.

As early as 1825 we find the Company building homes for employees. At the close of the 19th Century, we find the Company providing a well equipped library, a kindergarten for employees' children, classes in carpentry for boys, sewing, dressmaking, millinery and cooking for the girls. Later a Company lunchroom was opened, where wholesome food was sold to employees at very low prices. Still later, the Company engaged nurses, then a resident doctor; all available to employees at no cost. Prior to 1900 an informal pension plan was made available to long-term employees.

At the St. Louis World's Fair in 1904, the Company's Welfare Exhibit was awarded the Gold Medal. In 1905 the Company received the First Prize for its solution of a factory housing problem in a contest held by the International Exposition at Milan.

Obviously, the technique of administration was semi-paternal, but the history reveals a deep consciousness of a manufacturing company's social responsibility for the welfare of its employees. At the same time the Company paid the top of prevailing industry wages. The Company's entire history of fair dealing between management and employees is an accomplishment of which we are very proud.

Fundamentally, the same concept

exists today, but the technique of making that concept effective has changed. Today the Company's own experienced Industrial Relations staff is primarily responsible for carrying out a large part of the program—a program which is realistic and with no paternal aspects.

Our Company is small, and we know each other. Doors are wide open. Suggestion boxes are located strategically throughout our properties. Bulletin boards carry official notices regarding working conditions, matters of safety, vacations, holidays, union notices, and other current items of interest to employees. A plantwide Reading Rack Service supplies both helpful and educational reading matter on economics, home-making, income taxes, automobile care, How-To-Do-It, and an ever changing variety of subjects. A monthly employee publication, *The Cordage News*, is an integral part of communications with employees. Business conditions, union news, management statements, personal news, competitive and industry conditions are among the subjects covered in the newspaper. A recent survey indicated that 93% of our employees take the newspaper home, where it is read thoroughly by their families.

Being relatively small, we are in the position of carrying on much personal communication. Meetings are held from time to time with the entire supervisory force, including foremen, which meetings are led by the President of the Company with top management covering major developments. Questions are sought and freely answered. In addition, the day to day personal communication, which is a natural result of the spirit of the Company, goes a long way toward keeping people informed.

On the material side, the Company continues to follow the practice of paying prevailing wages. In addition, it provides group life, disability, hospital and surgical insurance, paid vacations and holidays, it sponsors and provides facilities for a credit union, and a sound participating Trustee-Funded Pension Plan.

Our present techniques in employer-employee relationship can best be described by our belief that when people know each other and

are well informed they will do an honest job of being fair in their dealings with each other.

Techniques Expand and Insure Sound Company-Customer Relationships

You already know Plymouth's product quality concept. The same high standards were used in measuring its early "Agents". These Agents were picked with great care and were men of high character and of excellent local reputation. They were kept in close touch with developments in the Company, and the flow of correspondence between these Agents and the Company shows the complete understanding and loyalty that was built up between the Company and the customer in the early days.

That same sound relationship exists today between Plymouth and its distributors, although the job is far more complex because of the

(Continued on page 42)

"... And all I ask is a tall ship and a star to steer her by..."



—and these healthy eager and intelligent lads are getting most everything Britain's poet laureate yearned for. Cadets of the U.S. Coast Guard Academy, they are going up the Main Shrouds of the cutter EAGLE, during a practice cruise in scintillating, sunlit southern seas. However, unlike the ambition of John Masefield to "go down to the sea again, to the vagrant gypsy life," these ambitious young men put aboard a tough academic curriculum and go through rigorous physical training to fit them for their goal as officers in the Coast Guard.

SAFETY WORKS for the COAST GUARD at CURTIS BAY

A Success Story—Directed to Management

By CAPTAIN VERNON E. DAY
U.S. Coast Guard

WHEN a success story comes out, we hasten to get the facts, to find out how it was done, and then try to equal or excel the successful one. Over and over this pattern has been followed by individuals, industry, and the military until this country has climbed into the No. 1 position in the world today.

The U. S. Coast Guard Yard is located at Curtis Bay, a suburb of Baltimore, Md. Their problems parallel those of other shipyards—widely diversified trades, uncertainty of a well adjusted flow of work, and rapid turnover of personnel during the feast or famine periods. They do about the same kind of work, and have the same kind of people with which to do it but they have achieved something no other shipyard in the entire country has done. They've knocked their accident frequency down for the long count—and it's still there hugging the canvas. For the second year in succession they have won the National Safety Council's award. That's something to talk about, and that's why I think you will want to hear about Safety at the Coast Guard Yard.

When we shrank back to peace-time size again, right after the war, we determined to make the Yard a safe place to work. We had only recently acquired a safety director and he brought his specialized knowledge and training to reinforce the determination of management. Likewise, he received from management the support necessary to put a program across. Oh, it wasn't easy! In our organization the shop masters were little kings. And the military management would like to have been. They resented his butt-



Author Day

ing in to their traditional affairs. They saw no reason why the old system wasn't satisfactory. Some of them still adhered to the doctrine that some accidents were Acts of God, and the rest were just carelessness, and the men got what they deserved. As time went on, some of the supervisors swung the other way, and said, "O.K., Mr. Safety, you look after things from now on."

Needless to say, it took several years to smooth out ruffled feathers, and pour oil on troubled waters, and channel our combined efforts properly. It was not the work of one man; many had a hand in it. But the program paid off.

Listen to this: By 1949 we had the frequency rate down to 35; in 1950 to 32.5; '51, 22.1; '52, 5.1; and in '53, 1.9. You can see, this success was no flash-in-the-pan. It was real pay dirt. But such a record doesn't just happen; it was MADE TO HAPPEN!

For a number of years, our principal approach to the safety problem was by eliminating hazards . . .

guards were installed, shields were set up, black and yellow zebra stripes appeared all over the place, aisles were marked, both inside and out, and traffic routed to the best advantage; fire warning and extinguishing systems were installed, safety signs appeared, small tools were more carefully maintained, and goggles, safety shoes, and helmets were made mandatory for certain trades or locations. These are no doubt the identical items being carried out in your own establishment.

There is an old Chinese proverb which says: "A man removes a mountain by carrying away small stones." This progressive removal of physical and mechanical hazards was expected to slice right into the anti-safety mountain. But, guess what? The frequency curve just jiggled a bit! We had tightened a lot of nuts in our very proper emphasis on physical things, but we had neglected one important application: The TWO LEGGED NUT! You've got to have a whole kit of tools when you tackle him—no two are alike, each is custom built. On the job, some will jiggle loose, and completely lose their effectiveness; others will rust in place, and can't be budged when you need to make a change. For these stubborn nuts, if penetrating oil and a good whack won't coax them, you really have to apply the heat. You've got to be careful not to cross thread—for if you do, you'll have to back off and start all over again. The right nut on the right stud, with the right wrench, the right alignment, and just the right pressure, will assure mighty good performance, but all this takes a

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bit of doing, and of course, we don't always succeed.

It is a significant discrepancy in human nature to disregard safety devices. Who among us is not tempted to stick his finger into a parrot's cage? It often takes a bloody stump to wake us up, and strangely enough most of us refuse to profit by the other fellow's experience—the bloody stump has to be ours.

However, all is not hopeless, for we know that we can be trained away from this "take a chance" attitude. But, it takes education, the kind we call safety education, and more of it! The important thing is repetition, over and over again. Once telling is not enough. Psychologists have found out it takes 3 to 5 times or more before an idea really soaks in. When the same idea comes at you in four or five *different* ways and especially if one of them is an overpowering event to emphasize it you really begin to grasp its significance. All of you have been driving for years. When you see another car approaching from your right, you do not have to stop to think out what to do. Years of driving experience moves your foot automatically off the accelerator and on to the brake. The psychologists call this a conditioned response. One of the best examples I can recall to further illustrate this, is a story from World War I. After a skirmish, it was suspected that there had been an infiltration of Germans into the French lines . . . French speaking Germans, dressed as Frenchmen. There was insufficient time to check each man, but the Commander had to separate the sheep from the goats before the battle plan of the day could be disclosed. He called a formation, and

lined the men up. He then, in French, gave: REST. A moment later, without warning, he called: ACHTUNG! Immediately, every German straightened to attention, while the Frenchmen remained relaxed. The Germans were conditioned to ACHTUNG! the Frenchmen were not. The separation was easy.

Now, how was this conditioned response obtained? By repetition, drill, drill, drill. Of course you can't drill outside machinists, welders, and vehicle operators like you can soldiers, but you can repeat your safety messages so often and in so many different ways, they just have to soak in. It has been said: "There is no such thing as a dull subject; only dull teachers." Finding variety, dressing it up, using a whole bag of tools, sometimes getting tough about it, yes, and even sugar coating it too, is what we have attempted to do at the Coast Guard Yard.

On the day the safety slogans first appeared on the paper cups of the coffee dispensers, a rigger who loves to clown was heard in this vein: "For crying out loud, I wear a safety helmet, safety goggles, and safety shoes; twice this week I've had to go to a safety lecture; everywhere I look there is a safety poster . . . and now I have to drink safety! They can't do this to me!" Then, raising his cup and turning around so everyone could see, he added, "Well, here's to safety!" And downed the hatch, promptly burning himself and almost choking, amid the laughter of the crowd. Do you know what this means? Here is evidence of the YARD WIDE program, and, what's even more important, its acceptance, right down to the laborer's level, *where it counts*.

The most effective safety measure devised, yet the most difficult of all to install and use, is common sense. During the war, the women, new to our shops then, were advised: If you wear your sweaters too loose, beware of the machines; if too tight, beware of the machinists. Happily, like this bit of chuckle, most of our safety education is conducted along the common sense line. However, hanging right in my own front hall is a case of safety in reverse. Listen to this motto: "Common sense is

good to have, but do not let it master you, for then it might deprive you of the foolish things it's fun to do." This certainly applies to women's hats, and to fun at a Halloween party, but it's bum advice on the shipways.

One of the foolish things it's fun to do is "Buzzing" . . . where you come as close to disaster as you dare, but don't really intend for it to happen. Recently a truck was driven downhill and aimed to ram directly into a building, instead of making the usual turn, this to give the boys a thrill. At the last second and I mean second, the truck skidded to a stop, its bumper scarcely two inches from the wall. It was necessary to back up the hill and maneuver to make the turn, all amid laughter and more tire skidding, and of course wasted time and wear and tear on the vehicle. The safety officer happened to be right there, and suffered a little wear and tear himself. The young driver certainly had skill, almost a sixth sense. It's too bad he didn't have the other five. It's also too bad we can't feed the buzzards. But, seriously, this constitutes a considerable problem for us, and it must for you too, for boys will be boys, the world over. This trait seems to show strongest in otherwise valued employees. They are usually the ones who have pep and the zip; the enthusiasm to tackle any job. However, in such drastic cases, and where we catch them red-handed, and sometimes red-faced, we find we have to administer the usual pat on the back a couple of feet lower down. It is much better, but admittedly more difficult, to guide exuberance into proper channels. Why is this difficult? Because it takes leadership!

(Continued on page 44)



"... That this nation under God, shall have a new birth of freedom, and that government of the people, by the people, and for the people, shall not perish from the earth."

—Abraham Lincoln

"... The aggregate happiness of society, which is best promoted by the practice of a virtuous policy, is, or ought to be, the end of all government."

—George Washington





RALPH S. EVINRUDE
with a "new fellah"

All too seldom, in modern industry, does there exist a pride of workmanship or the sense of esprit which binds men together to achieve a common goal. In many instances, the man at the drill press is far removed from the end product which he helps create. More often than not he finds himself resigned to the monotony of a particular task which affords little personal satisfaction. It is the press operator, typist or clerk who finds personal gratification in his work who is lucky indeed. For this reason, we at Evinrude Motors, consider ourselves most fortunate. The business of making outboard motors is a "happy" business—and this holds true for all hands. We've an informal motto at Evinrude: "Fun is our Business—Our Business Is Fun." Each year we close the plant for a two weeks' vacation. And from the shop, the stock rooms and offices, hundreds of us walk out of the building with outboard motors on our shoulders. All of us derive immense personal satisfaction from working on—and using—a product which affords healthful recreation to thousands throughout the country. Perhaps nothing better describes the growth of a company and gives an indication of the spirit which exists today than Gordon MacQuarrie's story of my father, "Ole Evinrude and the Old Fellows."

—Ralph S. Evinrude, Assistant Chairman of the Board of Directors, Outboard, Marine & Manufacturing Company

OLE EVINRUDE and the OLD FELLOWS

VIKING blood ran in the boy's veins. Often when Andrew studied his son's questing nature he found that he did not completely understand Ole Evinrude. To be sure there had been many an Evinrude back there in Norway who had sailed the seven seas. There had been hardy Evinrudes who had gone with the fishing fleets to the Lofoten islands. And there had been men of the same strain who had crossed the Atlantic with Leif Erickson.

All this Andrew Evinrude knew—and feared. He himself was a man of the soil. He had been a farmer and landscape engineer in Norway where Ole was born. He was a farmer now in Dane county, Wisconsin, on his own homestead. It was best that Ole be a farmer. Andrew thought:

"For Ole there is one sure refuge—the land where a man can grow his own food and be safe against the

OLE EVINRUDE'S

Management

world. Ole will grow up here on the farm. When I'm gone he will carry on. There is security in the land."

That's the way Andrew Evinrude thought.

Perhaps it is not so strange that he thought like that. It was Andrew Evinrude's search for absolute security for his family which blinded him to the stirrings in the Viking heart of blue-eyed Ole. Andrew was not a man to go along with the philosopher who said: "The only security known to the soul of man is a cheerful acceptance of insecurity."

"The farm's the place for Ole . . ." Often the father said it, out of his own deep affinity for the soil and his deeper affection for the chunky son with the far apart eyes and the blonde hair.

Ole was a good boy. He did more than his share of the chores.

He was lightning quick with his hands. He could mend a broken harness or repair a wagon axle better than most men when he was 12 years old. He attended the country school, a strongly built little boy given to looking out the window until it came time for the arithmetic lesson. Then he was all attention.

A boy can do things with arithmetic. With arithmetic a boy can solve a problem. He can start out knowing little about the problem and when he has finished it he has started from a given point, gone somewhere, and wound up at the logical point of conclusion.

Arithmetic was fine. Ole liked it and he was good at it. Maybe, some day he could put it to work . . .

Together with those skillful hands . . .

Chances are Ole himself thought like that, though the family history records no such thoughts. The facts are that Ole Evinrude as a boy was a wizard at doing things requiring manual dexterity. He was a devoted student of mathematics.

Certainly young Ole, staring out the schoolhouse window, did not then sense his destiny, though he was aiding and abetting it instinctively by sharpening the tools given to all boys at birth.

The world was pretty big. The Evinrudes were poor. Ole's formal schooling ended in the third grade one day in June.

For the present there was the farm. Ole never shirked his work. When he was 14 he was "better than a hired man." Often when he leaned on a hay fork to look beyond the tops of the oak trees his father said cheerfully: "You can't beat farming for a living, Ole."

The family records reveal one terrific clash between this father rooted to the soil and the Viking son. Ole Evinrude did his level best on the farm, and Andrew fought a losing battle trying to keep him there. Trying to keep Ole a farmer was like trying to sweep back the tide with a broom.

The older Ole became the more he disliked farm work and the more he loved to work with machinery. Even so, if there was hay to be pitched, or cows to be milked, Ole did more than his share.

"The hay rake broke down. Think you can fix it Ole?"

Then Ole was happy.

The Viking yeast was working. More and more Andrew Evinrude saw his little Ole staring for long moments over the tops of the oaks and red cedars toward the place where the sky slides down and seems to touch the earth.

One day Andrew found Ole working on a fearful device—a sailboat!

Ole Evinrude, son of a farmer, high and dry and safe on the land in inland Wisconsin building a sailboat . . . such a fearful device . . .

It was a thing assembled instinctively from scraps of lumber, a thing built by young Ole with care and accuracy. It was constructed "out of his head," the family recalls. The only sailboats he had seen were in picture books.

Andrew Evinrude saw it half built in back of the barn. Rage possessed him for he knew now he was fighting against something in Ole he could never understand. He destroyed the boat with an axe, hacking and chopping until it was mere kindling. He made Ole carry the kindling to the back stoop of the farm house and pile it neatly.

And then Andrew Evinrude, white and trembling, went inside his house and sat in his cold living room with his big hands covering his face. He sat there a long time. His wife, Beata Dahl Evinrude, called him to supper—there was no taste for food in the mouth of Andrew Evinrude.

Now and then, from the back stoop he heard the rasp of wood against wood—Ole piling his sailboat alongside the door. Long after dark, with supper cold on the table, Beata Dahl came into the living room. She spoke only Norwegian, as did Andrew. They never learned English. She said: "Ole stopped crying. I washed his face. Andrew, we'll eat now."

Across the table from Andrew sat Ole, clear-eyed, determined. Beata Dahl said grace. She knew that neither her husband or her son had it in them to speak.

That night there was little sleep in the Evinrude home. Andrew rolled and tossed and muttered. His wife lay rigid beside him. In another room, wrapped in a feather tick, Ole Evinrude stared into the darkness.

There was a place where he could build his boat again . . . where his father would not see it and destroy it. It was a flat spot on an oak-covered hill. He could carry the hammer, saw and nails and hide them. He could steal an oak board here and one there. He would have to be careful. But the oak trees could smother the noise. If necessary, he could do it at night with a barn lantern for light.

He'd have to be careful to see that his father did not find out.

In the oak grove Ole went back to his labor of love. He worked hard for Andrew. Andrew marveled at the way his son responded to his every command. Andrew thought: "It's good to discipline a boy now and then. Makes a man out of him." Meanwhile, Ole was finishing a 16-foot sailboat.

Everything was serene on the Evinrude farmstead. In the evening in the kitchen Beata Dahl whisked through the dishes, fed the dog, poured a saucer of milk for the cat. Andrew, content, repeated over and over again to Ole:

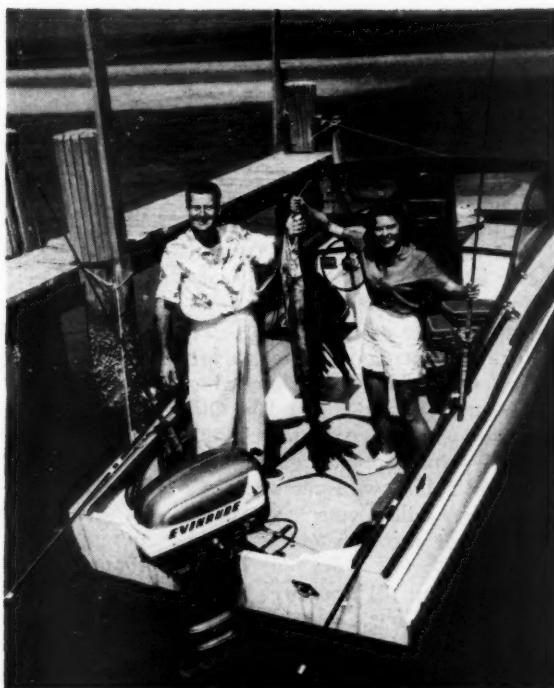
"Boats are dangerous. First thing you know there's a puff of wind and over you go!"

Ole built his boat in the oak grove instinctively, as he had built his first. At the time Ole was building his second boat, he figured out mathematical problems with a broad, blunt thumb moving along a carpenter's rule. He used a carpenter's rule as some people use an adding machine, or as an Oriental uses an abacus. Or as a carpenter uses a steel square, in which there is a vast world of mathematics.

Until he died, Ole Evinrude always carried a carpenter's rule. He never owned a slide rule.

Inevitably Andrew discovered the boat. Ole was absorbed in the finishing touches the evening his father walked into the grove. But this time, there was no scene. With a heavy heart Andrew accepted the in-

Evinrude Big Twin, *Istiophorus Nigricans*, and Lucky Anglers in Florida



Modern outboard cruiser, powered with 25 hp Evinrude Big Twin, makes ideal unit for game fishing in Florida waters. This rig is typical of the growing fleets of outboards used for fishing, cruising and family recreation.

evitable. He talked calmly with his boy.

The completed boat did not leak. Ole proved it to his father by filling the hull with water. The boat was ready to go. It had a spruce mast. It had a sail made from old canvas. And it did not leak. Once it soaked up the pails of water Ole poured into it, not a drop of water came through the seams.

There was nothing Andrew could do except help Ole load the boat on the farm wagon and haul it to Lake Ripley in Jefferson county.

Andrew remained on shore. Ole got in the boat. He shoved it beyond the shallows and hoisted his sail. He had never been in a sailboat before. While Andrew watched, Ole sailed his boat as though he had been sailing all his life.

He was just 16 years old then.

He sailed his boat instinctively. He had built in instinctively. It was a natural process. The Viking yeast was working . . .

Heaven knows what ancient Viking gods whispered to Ole that day on Lake Ripley. They must have been close to him. They must have told him when to head 'er into the wind, and when to duck as the heavy spruce boom swung across the gunnels.

He had never been in a boat before.

He was 16 years old.

Andrew Evinrude knew now that he had lost. He knew that Ole was not for the land. He knew there was no use trying to get Ole to "settle down." He knew Ole would never be happy in the long Wisconsin winter sorting tobacco in a warehouse.

The old Norse gods were moving in on Ole. They were elbowing Andrew out of their way. The Old Fellows who whisper in the rigging of tall ships took charge of Ole. The Old Fellows whispered to him:

"You've sailed your own boat. Now what are you going to do Ole?"

They said: "There are bigger boats to sail Ole . . ."

And so it happened that Ole Evinrude who was to become the world's genius of the outboard motor, and the founder of a new American industry, walked off the farm.

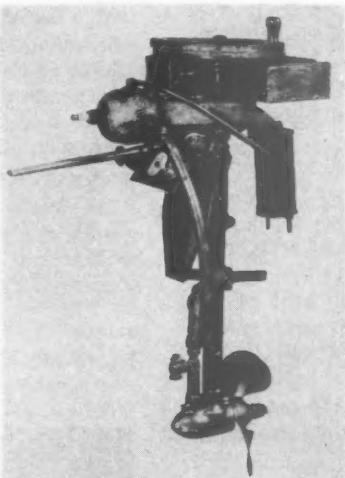
Andrew was unhappy about it and so was Ole. But now Andrew

knew that wild horses could not keep Ole on the farm.

Beata Dahl Evinrude saw to it that her little Ole left her wearing a pair of honest home-knit socks. She did not intend that Ole should stand against the world on cold feet.

It was a good thing Beata's socks were thick and closely knit. Wearing them, Ole walked the 20 miles to Madison. He wore them a long time. When they developed holes at the toes and heels, he mailed them back to his mother and she darned them. If they were too far

OLE EVINRUDE'S FIRST



First Evinrude motor was forerunner of new industry with a total of 4,500,000 outboard motors now in use. The most recent Evinrude models are free from noise and vibration, a far cry, indeed, from the first "putt-putt" of nearly a half century ago.

gone, she sent him a new pair — socks knit of sheep's wool with the natural oil of the wool left in.

Madison was pretty big. It was almost too big for Ole. He wrote his mother how lonely he was. A 16-year-old boy can get terribly lonely in a big city like Madison, Wisconsin. Beata Dahl sent Ole a new pair of socks whenever she thought he was lonesome.

Fuller & Johnson, a farm machinery shop, took in the deadly earnest Norwegian boy at 50 cents a day. He'd have taken the job for nothing a day. Fuller & Johnson had a machine shop with steel lathes in it! Ole had a lot to learn.

When he felt he had soaked up all the tricks of the trade possessed

by Fuller & Johnson machinists, he moved to another machine shop.

Maybe there was a machinist who knew something new . . .

The Old Viking Fellows caught Ole young and trained him their own way.

At night after a day's work, Ole went to his boarding house and read engineering books. He studied algebra, calculus, and trigonometry under the light of an open gas jet in a boarding house, with Beata Dahl's socks keeping his feet warm because the room was cold.

Twenty years later another with the Viking strain strong inside him came to Madison from Little Falls, Minnesota. Like Ole, Charles Lindbergh remained in Madison only long enough to get what he wanted.

Ole Evinrude was sailing his own ship now. Of course the Old Fellows were helping him. They were always at him, goading him.

Young Ole learned so fast that he was a crack mechanic long before he left Madison.

He soaked up knowledge like a sponge. He left Madison for Pittsburgh. Pittsburgh had no use for a sincere kid with yellow hair — not as a machinist. Pittsburgh gave him a job in the rolling mills. When Ole decided he knew more about steel than his boss he departed from Pittsburgh, heading for Chicago.

A Chicago tool works hired Ole after one look at him. Ole remained there a short while. It seems that with all the "experts" that were working in the tool works, they had nothing much to offer Ole.

So Ole took the train to Milwaukee. He had long wanted to plant his roots in "the big city" of his home state. Now he felt confident of his skill and ability. This was the time to start. His first step was to open a pattern shop. Despite his shyness, which made it impossible for him to assume the hard-boiled business front, it was not long before his skill was discovered and the E. P. Allis Company engaged him as master pattern-maker and consulting engineer.

At that time Ole found "board and lodging" in a typical, colorful oldtime boarding house operated by the maternal but firm-handed Mrs. Doyle. The latter tolerated "no shenanigans in Mrs. Doyle's boarding house, now mind ye" and many

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are the tales told of her totalitarian, though benevolent management. One of them involves the serious Ole Evinrude whom Mrs. Doyle counted as one of her very own, and therefore gave him certain prerogatives.

When Ole began building his first engine, Mrs. Doyle not only permitted him to do it in the basement but she herself offered him advice and, in fact considered herself an indispensable assistant in the project. To the other boarders who pooh-poohed Ole's contraption Mrs. Doyle let it be known that "the young man will build his ingin in Mrs. Doyle's basement and there'll come a day when he'll make it run and the rest of yez will be as proud of him as I am now!"

Indeed the day—or rather the night did come when the "ingin" ran. The boarders were at supper, enjoying Mrs. Doyle's home-cooked vittles by ample illumination from Welsbach gas mantles overhead. Ole, the star boarder whom Mrs. Doyle so well loved that she would let him come late to his meals, was down in the basement, his experimental engine hooked up to the gas feed pipe.

Everything was all set. Ole gave the wheel a turn and the engine burst into ear-splitting roar. It ran perfectly—and about as silently as a ten ton truck speeding across an old fashioned bridge with loose planks. All of the gas supplying the house was sucked into the innards of the roaring motor and every light in the house went out.

The explosions in the basement fairly rattled the dishes on Mrs. Doyle's table, frightening some 30 boarders out of their wits. But in the darkness and confusion and over the reverberations from the basement there was heard the voice of Mrs. Doyle—not too cool, but full of faith:

"Tis nothing but Ole's motor. I told yez it'd run! Now you'll excuse me while I go down in the basement and bate the ears off Mr. Evinrude."

Thereafter no more motors were operated in Mrs. Doyle's basement.

Things were coming Ole's way. He had the reputation, earned solely by virtue of skill, of being able to create anything from metal or wood. He still wore Beata Dahl's

hand-knit socks and he worked like a dog. Often he must have thought of the sailboat, rotting away on the shore of Lake Ripley.

The Old Fellows did not let him dwell too much on that. They kept right after him, challenging him: "Go farther, Ole. Never mind the landmarks. Keep sailing."

The Old Fellows had him in a strangle-hold now. They had him trained so that he couldn't stop going forward if he tried.

The day of the horseless carriage was dawning. Ole made his own automobile—wouldn't you know it? It was a four-cylinder, air-cooled friction drive job which successfully carried Ole over the handy hills of the southern Wisconsin lake country to fishing places.

He decided that what the automotive world needed was a standard gasoline engine. He designed and built the engine. The firm of Clemick & Evinrude was formed. It was a going concern. Included among the orders was one for 50 portable engines for the United States government.

Many a Milwaukeean remembers Ole in his own machine driving about town, and so do many of the veterans in the present big factory which bears Ole's name. The old timers in the plant never forgot Ole.

Things were certainly coming his way back there in the Clemick & Evinrude days. He was still wearing Beata Dahl's wool socks with toes and heels well darned. He was earning real money. He was known in Milwaukee as the slickest mechanic in the city. That meant

something in a town noted for top notch mechanics.

Clemick & Evinrude prospered, with Ole attending to the production.

There was a girl. Bess Emily Cary. She kept the books for Clemick & Evinrude. She attended school all day and came in the evening to do the accounting.

She was a little girl with fair skin and deep blue eyes.

Ole got in the habit of looking up from his work in the shop to stare at her. He would drop his eyes and become very busy when she looked his way. Ole was the best pattern-maker in Milwaukee. He had no conceit. He was terribly shy. He was so shy that when he entered a hospital, years later, he blushed when the nurses came into his room. He put off going to the hospital because: "I am not going to sit there in a night shirt surrounded by women!"

Bess Cary, who "had a mind of her own," took to looking up from her books so as to catch Ole's eye. The story goes that she would fix her gaze on Ole, wait until he looked back and then smile at him. Instantly Milwaukee's finest mechanic would turn brick red and become exceedingly, aimlessly busy.

Bess Cary was more than interested in this shy Norwegian genius. She was in love with him, and he was in love with her. But when she walked back into the shop, Ole would hem and haw and stutter and stand out of her way so that her skirt would not be daubed with the oil and grease on his overalls.

Then the old Norse gods got at Ole again—"Farther, son . . . out of sight of land."

Ole concluded his partnership and went on his own with the Motor Car Power Equipment Company. His idea was still to build that standard motor plant for horseless carriages.

In the new business, there was trouble for Ole. He tried to do everything alone. If he could just get someone he could rely on to attend to the front office, it would be a better business.

Maybe Bess Cary would help . . . It was in his mind for weeks before he screwed up his courage to ask her. Bess said: "I'll take care of

(Continued on page 27)



Jim was proud of his golf, and had brought his mother-in-law along to watch him play with a friend. "I'm particularly anxious to make a terrific drive just now," Jim told his friend. "There's my mother-in-law over there, and I—."

"Don't be a fool," said his friend, "You'll never hit her at 200 yards!"

The Advantages of Decentralization in the Defense Program

by Don Mitchell

DECENTRALIZATION of operations is a trend in industry of which few segments of the public are aware—in fact, this can also be said of some segments of industry itself. That is understandable, because true decentralization of operations really is a relatively new phenomenon and individual organizations have, therefore, had little opportunity to examine case histories to determine what advantages decentralization would bring if applied in their particular instances.

Until comparatively recently, decentralization was considered to be merely another *method* of operating a manufacturing business. Also, it was, and still is, frequently confused with *dispersion*.

This would seem to be the appropriate spot for several definitions.

Decentralization means the assignment of authority and responsibility to the lowest echelon of an organization at which appropriate action can be taken, subject to the broad framework of controls at the top management level. On the other hand, *dispersion* means the physical decentralization, the scattering of facilities which may or may not be operated under decentralized management. Furthermore, an organization can have decentralized management and not be dispersed, although decentralization works most effectively when facilities are dispersed.

Decentralization is not a mere method, but has taken on the proportions of a basic philosophy of management.

American production was a very powerful factor in the winning of two World Wars, yet that production was achieved by a national industry that was greatly centralized in many respects. At the end of World War II, however, many companies embarked on expansion programs to meet pent up consumer demands, had to go far afield to find new labor markets, and to locate new buildings or sites to augment already over-

expanded facilities. Because of this enforced dispersion of facilities many of these companies found they were forced to let local management make many decisions that normally would have been made at headquarters. In other words, these companies were, to a degree, practicing decentralization. Some of these manufacturers, including my own company, Sylvania Electric Products Inc., discovered that this taste of decentralization was to their liking—that it was an effective means of attaining more effective operations. And the trend has steadily accelerated ever since.

Decentralization—let's look at it more closely. This modern philosophy of management and operations has been pulled apart, its various tenets have been sliced and studied microscopically, and yet much has been said and written about it that shows a lack of knowledge of many of its concepts, and a lack of appreciation of its effectiveness. Some companies claim to be decentralized, and yet really are not; other companies describe themselves as centralized, yet practice decentralization to a degree.

Sylvania's philosophy of decentralization requires two factors—(1) a large measure of autonomy at the divisional and plant levels and (2) dispersion of plants and laboratories. Under our program (Sylvania has nine operating divisions, 45 plants and 12 laboratories in 11 states), the broad policies are worked out by, and come under the control of top management, whose basic role is to advise and counsel the operating organizations, to review their effectiveness, and to make such recommendations as will increase that effectiveness. Divisional general managers are expected to make their own decisions and are held responsible for results. And, under the divisional general managers, plant managers also are expected to make *their* own local decisions and are responsible for results.

In theory, of course, as far as the distribution of

In becoming one of the nation's leading sales executives before reaching forty, Don G. Mitchell, Chairman of the Board of Sylvania Electric Products, Inc., recognized market research as a strong and effective sales tool.

As his career has progressed, his activities have broadened to other management phases, and he has become a recognized authority on corporate organization and policies, especially in the broad area of human relations.

A leader in industry association work, Mr. Mitchell is a director of American Management Association and is chairman of its Executive Committee. He has been a director of the National Association of Manufacturers, National Electrical Manufacturers Association, and National Sales Executives. Recognition for work he has done for management has come through honorary degrees from Northwestern University, Parson's College, Rensselaer Polytechnic Institute and Stevens Institute of Technology. He is a member of the Corporation of Polytechnic Institute of Brooklyn, N.Y., the Advisory Committee to the Graduate School of Business Administration and the School of Commerce, Accounts and Finance of New York University, and the Board of Education of Summit, N.J.



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authority is concerned, managerial decentralization could be carried out in one or two physically centralized mammoth plants. In practice, however, this is not usually the case, and we have found in our lines of business that multi-plant operations are necessary, for a number of reasons. Chief among these reasons is the very human fact that the top man at any one location tends to absorb most of the authority, leaving very little for his subordinates to accomplish on their own initiative and responsibility.

This brings us to the very heart of, and reasons for, decentralization. By putting men on their own to manage small local operations, we encourage initiative, ingenuity, and independent thinking. The entire operation is more efficient than if responsibility and authority were retained in some distant headquarters. Not only is the operation as a whole more effective but an ideal management training ground is provided for the individual. Good men don't get lost in the shuffle, they learn to accept responsibility, and to lead others. There is, too, the very obvious and compelling social aspect of decentralization—the knowledge that you and your associates are a vital part of a community and are not lost in a huge mass of activity.

Decentralization is a philosophy that was developed over the years by manufacturing companies pursuing a normal trend of operation—i.e., they were manufacturing commercial products for a commercial market. Nevertheless, our experiences during the Korean war and ever since the start of the post-war national defense program have convinced us that—at least in a company like Sylvania with a wide diversity of products and services—decentralization of management and operations is ideal for those companies engaged in developmental and production work for the Armed Forces.

In the first place, it is obvious that it is unwise to mix apples and oranges by undertaking commercial work and military work under the same direct management. Even if, say, the same branch of the science of physics is applied to parallel developmental, investigative, or production work on a commercial basis on one hand, and a military contract on the other, decentralization enables us to have available *two* direct management teams—one to carry on the commercial work, and the other to handle the military contract. Non-decentralization, on the other hand, might have made it necessary to administer both jobs with one direct management team, since there would not be enough men trained in management to build two organizations. The evil in dual jobs for one man, especially when one job is military and the other commercial, is that one of the jobs probably will suffer.

Then, there is the case of the parent who was dwarfed by the child. Many manufacturing companies

have had the experience of inaugurating a research or developmental project directed at a commercial end, and subsequently having one of the Armed Forces become interested in it and proffer a substantial contract. There is always the danger that the military project will smother the potential of the commercial work unless the company, through decentralization, can divorce the two, and provide a management team to carry the commercial project through to intermediate or long-term advantage.

Therefore, when military and commercial projects are closely allied in nature, decentralization makes it possible to carry out the military job according to the terms of the contract and to the satisfaction of the Government, without sacrificing the company's commercial objectives in the scientific and engineering fields.

It must be borne in mind, also, that in projects for the Government, there must be a continuous flow of ideas, knowledge, and test data between company management and the military service or other agency involved. A company that has the *habit* of decentralizing will find it a simple matter to set up a new facility and a new management where they must be located—close by a test area, proving ground, range, air base, atomic reactor site, or the like. A company not accustomed to decentralization might find it difficult to establish and maintain a facility far removed from central headquarters.

And, of course, Government contracts are based on prompt delivery! The decentralized facility, located near the "market" for its military production, helps to assure that contract deadlines will be met, and that long transportation distances or bottlenecks will not delay a priority production job.

If I were asked, however, to take all the potential benefits of decentralization into consideration, and to select one benefit above all the others, I would say that the benefit to human relations leads all the rest. More than any other organizational philosophy, decentralization combines the economic benefits of mass production and the social benefits of maintenance of identity of the individual. In true decentralization, the units are part of a coordinated team with each team member playing his full proportionate role; centralization not only discourages but frequently prevents this team spirit.

Industrial growth has been unprecedented over the past decade. Decentralization has been one of the most important factors in achieving that expansion and meeting record-breaking production requirements. Furthermore, decentralization has provided a strong foundation for the future, which will make the past dwindle by comparison in every field of industrial activity.



Let us have faith that right makes might, and in that faith let us dare to do our duty as we understand it.
—Abraham Lincoln



I hope I shall always possess firmness and virtue enough to maintain what I consider the most enviable of all titles, the character of an "honest man."
—George Washington



The Design of Organization

by K. Theodore Korn, Ph.d



The Author

ALFORD cites Rabbe's definition of organization, as follows:

"Organization concerns itself with the classification or grouping of the activities of an enterprise for purposes of administering them. Organization is to the business what the nervous system is to the human body. Its purpose is to send instructions (impulses) to the operating members and to receive and transmit to top management (the brain) information which will enable it to function intelligently. (Rabbe, Mech. Eng. Vol. 63).¹

This very intrepid analysis of the purpose and function of organization states, in effect, that organization is, first, a methodical arrangement of activities of an enterprise, and second, an apparatus of communication to and from a central point. It is implied that if communication is operative in organization, the "central point" will indeed be in a position to "function intelligently", meaning that it will be possible for top management to render decisions.

Despite his choice of so thorough an analysis of the knotty problem of organization, Alford confines his ensuing discussion to the first aspect of organization, namely to the *structural* aspect without considering the *functional* and *operational* requirements which are implied in Rabbe's statement. These are *organization*, that is the structural form, *communication*, which is in effect a part of the functional form, and finally the entire area of *decision-making* which may be considered a part of the functional form and moreover an essential segment of the operational form of organization.

A similar trend seems to dominate the considerable store of literature on the topic. It appears that the first real departure from this "traditional" thinking about organization and management and the treatment of the complex problems involved were proposed by Livingston² who introduced, among others, the concept of *association* into the thinking about organization.

It appears important to observe that Rabbe's definition clearly implies that organization partakes of the aspects of communication and decision-making, yet Alford says little about it. Other authors deal with the problem in much the same manner. This might suggest conclusions as to the rather *mechanistic* orientation of those who engage in the study of such problems.

Studies of organization conducted in recent years

by multidisciplinary management research (*MR*) teams have disclosed a number of causal relationships which seem to permit tentative generalization. Moreover, it appears permissible to formulate a number of basic concepts on the basis of which it is possible to gain clearer understanding and deeper insight into the operational problems which arise.

These *MR* studies of the organization of operating enterprises devoted to the making of *profits* finally show that a policy-making management may permit the development of organizational structure, function and operation by default, or it may take steps to affect its development by *design*. In the first case, the "natural processes" are permitted to exert their total influence; in the second case, organization is *designed* toward the defined, basic goals of the enterprise, and with consideration of the best characteristics of those comprising the organization.

In order to avoid semantic difficulties which may result from the widely divergent use of terminology, it may be well to state the meanings of a number of terms which will be used in this discussion.

Management refers to an activity, not to a class of people. It refers to that activity in business, commerce and industry whose function it is to solve the problems which arise in the direction of organized, productive, human endeavor.

Organization is thought of as one of the necessary operational tools of a problem-solving management. In order to do an effective job of "managing" two fundamental requirements are indispensable. One, the tools must be sharp; two, they must be used with skill. The effectiveness of a problem-solving management, hence, depends upon the sharpness of its tools, and upon the skills with which the available tools are used.

Problems vary in nature from absolutely *static* to entirely *dynamic*. This does not imply that they are either one or the other. It is suggested that "static" and "dynamic" represent the *outer limits* of a range within which any combination of both is possible. A problem of static nature may be solved to remain solved. One of dynamic nature cannot be solved and then forgotten in the expectation that it needs no further attention. A *dynamic problem* is solved to the extent to which management has control over it, and it is unsolved to the extent to which management lacks control over it.

Fundamental to filling its function as a problem-solving activity, management needs a theoretical struc-

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turalization of the nature of problems. One such concept is to view problems as existing on three levels. One, **The Symptom Level**, that is the place and time where and when the *causes* of an existing situation become strong enough to be observed with annoyance or concern. Second, **The Problem Level**, that is the definition of the problem itself, its specifications as to locus, etc. Third, **The Cause Level**, that is the operationally validated reasons which are responsible for creation or existence of the problem.

Actio cum reactio. The physical sciences have demonstrated the validity of the law of Cause and Effect. A similar formulation is permissible with respect to organizational endeavors, namely, the law of *Stimulus and Response*. It may be said that a definable relationship exists between a response, or a reaction, and a specific stimulus, or an action, which caused the response. Two fundamentally important avenues of approach are now open. One, if it is possible, through systematic and unbiased study, to establish the stimulus-response relationships, then one may conclude, having knowledge of one, as to the other. If this is available at a high level of confidence, one may, second, define what would constitute "desirable" responses, and on the basis of such knowledge stimuli may be designed and applied to produce "desirable" responses, where "desirable" has previously been defined by a set of criteria acceptable to all involved in the relationship.

The establishment of criteria on the basis of which evaluations as to effectiveness and progress will be made depend upon the basic goals which an enterprise may pursue. At this point it is not so important to show the kind of criteria which might have application, or which might have been used in such endeavors, but rather that the use of the device will produce, first, a sort of objectivity which tends to reduce, if not eliminate, personal bias, prejudice, etc. from the evaluative processes, and second, increase the usefulness of the evaluation process by making possible the detection of systematic error. If such error is detected, it is, in turn, possible to either adjust for it, or if the nature of error is more definitely known, correct it. This, in effect, sets in motion a feed-back the operation of which will continuously evaluate and improve the organizational process.

In practical terms, the *Design of Organization* seeks to facilitate organizational development in respect to structural organization, communication, and the process of decision-making. The effectiveness of an organization can be defined in terms of the contributions made by its components toward the attainment of defined and known goals.

In its simplest form, an organization is represented by one individual. Let us assume that **John** has an idea for the design of a new mouse trap. He proceeds to complete the design, builds a working model, and produces detail drawings of the required parts and assembly. He is **John**, the engineer.

Next, John determines the facilities and equipment he shall need, and the money necessary to begin operation of a plant to produce the product. He finds he does not possess enough capital of his own, and now

turns to friends and bankers for capital. He is **John**, the financial specialist.

He receives the required funds, and proceeds to lease space, and buy machines and materials. He is **John**, the purchaser.

He hires men to set up the plant, and men to operate his machines and assembly line. He is **John**, the employer.

He records his expenditures and disbursements, and becomes **John**, the accountant.

He calls on potential re-sellers of his product, and creates a market. He is **John**, the salesman.

As soon as **John** realizes that he cannot be "on the road" selling and at the same time attend to all of his other duties, he begins to think in terms of dividing his total task into components. He may think first in terms of the "inside component" versus the "outside component". He engages a man to whom he assigns the responsibility to be "**John**, the salesman". No thought is, as yet, given to a functional division of tasks. His efforts are solely concerned with dividing "himself". In practical terms this means that the decisions which are associated with performing a function are concentrated around **John**. **Bill**, his salesman, is expected to be that part of **John** which theretofore was **John**, the salesman.

A similar process takes place in all of the other areas of **John's** original responsibility. The man who assumes the job of **John**, the accountant, the man who assumes the job of **John**, the engineer, of **John**, the plant manager, the personnel manager, they all assume merely that part of **John's** former jobs which has to do with doing the respective job. Every time another phase of **John's** original job becomes a component of the total effort, the complexity of the total structure is increased. For, what is disturbed in the process is the uniformity of thinking about the structure, the commonness of goals to be attained. As long as **John** was the engineer, the financier, the salesman—the planner, doer, and checker, **his** goals were identical with *company* goals, **his** philosophy identical with *company* philosophy, for, in effect, he was the company.

In time, he and those who share his task with him grow increasingly, and more or less painfully, aware that a number of forces act upon them. These forces are psychological, sociological and economic in nature.

One of the most weighty psychological forces is the *balanced delegation* of responsibility and authority. Structurally, it is, of course, relatively simple to say, "You are responsible for shop management. Your title is Plant Manager. You have Authority to do this, this and that." It is also relatively simple to maintain this on a *verbal* level. A basic question which the delegator needs answered is, "To what degree am I psychologically capable of delegating authority?" The metamorphosis embraces not merely the subordinate but also the policy-maker. At the outset, he perceived himself in the roles of specialists. The many jobs he performed to his own satisfaction, as assessed by his own criteria of financial success and growth were those requiring specialized training and experience. In the "natural" process of division of his areas of activities, his specialized functions are indeed assigned to specialists, and he becomes himself a "generalist", that is

a specialist in coordinating the activities of specialists.

This is the sort of process in which organizational development occurs in general. It is characterized by the policy-maker's realization that he has become too busy to attend to all of the functions himself. He divides his job under the viewpoint of expedience and under the pressure of the moment. Little consideration is usually given to future needs which might be anticipated, nor to the probable effect today's decisions may have on tomorrow's success.

Another way of organizational development requires more *deliberate* action on the part of the policy-maker. This deliberateness refers to (1) the anticipation of future organizational needs, (2) the anticipation of the effect of organizational decisions upon future developments, (3) a concern not merely with accomplishing a task, but at the same time a consideration of the fact that the enterprise is a miniature society which is significantly affected by the individuals which comprise the organization.

This influence upon organizational development is strongest at the extreme top of the management pyramid. The influence exerted upon the lower levels of an organization gains in force, either to the advantage of the enterprise or to its disadvantage. If, as will be seen later, the policy-maker gains an appreciable amount of insight into the psychological, sociological, and economic forces which affect the enterprise-as-a-whole he may indeed be armed with a powerful tool which may enable him to attain a maximum of effectiveness of his organization. This has a number of distinct advantages. First, it is economically sound to do the kind of "managing" by which optimum results are obtained from a company's assets. Its people are an asset. Second, a competent employee will derive the largest satisfaction from his work if his competencies are utilized approaching the optimum. To accomplish this, organization must be developed by *design*.

The first indispensable prerequisite for organization by design is the policy-maker's orientation, and second, the resulting orientation which he causes with his subordinates through his own. If, to him, organization is merely the definition of the performance of specified tasks to be accomplished by specified patterns such as the conformance to established routines and procedures then it is sufficient to write these specifications, make the assignments on the basis of his authority, draw an *organization chart*, display it on the wall of some office, and sit back. To this policy-maker "everything" has been taken care of, and he will be quite serious in his expectation that he has now a smoothly running organization, indeed.

When old difficulties arise again, or seemingly new ones develop, he will not question the validity of the

analysis of the problems, nor that of the methods by which they were attempted to be solved, nor will evaluation occur on the basis of the kind of objectivity which is best obtained by the use of predetermined, published criteria. The policy-maker who operates his company on this basis has been found to create little understanding among his staff of the fundamental goals which he desires to attain, and he has been found to be psychologically incapable to accept the responsibility for being the cause of this kind of condition.

There is another type of policy-maker. He looks upon his business as a highly *complex, living organism*. He knows that this organism is subject to the same laws as the biological organism. The latter cannot survive unless it has the ability to adjust quickly and effectively to the ever-changing forces which exert themselves upon it from within and from without. If it is considered that the individual in our society lives in a psycho-socio-economic force field, that is to say, that the forces acting upon him are of economic nature, are originated from within him (psychological) and from without through his belonging to social groups, one may assume a different perspective of the nature and requirements of *planned organization*, and the policy-maker with this sort of orientation will insist upon far more fundamental treatment of organizational problems. The organization of productive, human endeavor must be viewed with the need in mind that an enterprise, too, must have qualities which enable it to adjust to required changes quickly and with a minimum of "pain". In this sense it can, indeed, be likened to the living organism. If this kind of orientation prevails at the top management stratum it will not be difficult at all to perceive the design of organization not merely as possible but as essential to the continued success of the enterprise-as-a-whole.

The problem of organization can never be considered as being solved. It may be considered solved to the extent to which management gains and maintains *control* over it. The *degree* of control required for optimum management effectiveness is a function of the size of the organization. The *type* of control required is the same, regardless of the product, service, type of production, etc. In developing the control, it is important to *measure* the effectiveness of the organization. This accomplishes first a way of evaluation which is objective and which is not restricted in use to those in command but may be equally applied by those who are evaluated. Second, since no design will be perfect, it will be in need of constant improvement. An objective measurement of organizational effectiveness then provides a feed-back, that is a mechanism by which deficiencies and error may be detected and adjusted. This will, thirdly, provide the enterprise with a quality which resembles that of the biological organism.

As has been described in general terms before, an organization may develop in at least two ways. It may develop by chance where no particular attention is given to the elements of a division of work, such as assignment of authority in relation to specified responsibilities, etc. What is being delegated is not the *task* itself but rather a *volume* of responsibility which



has become too large to be handled in theretofore customary ways and by previously available people. Personnel additions are not made on the basis of specialized knowledges and skills required to accomplish the *total task of the enterprise* in a most satisfactory and satisfying manner.

The process of reaching an age of organizational maturity begins when the policy-maker orients himself to the inevitable fact that he determines developmental trends himself, and that his own effectiveness bears significantly upon that of his subordinate organization. At this point he will begin to identify himself rather as a *generalist* than as a specialist. When this stage has been reached attempts are undertaken to "put the house in order". Organization charts are drawn. This, however, is merely symptomatic of existing disturbances and organizational difficulties.

The process of organization by design presupposes a knowledge on the part of the policy-maker of the enterprise's real goals, of its realistically established needs, of the needs, desires and peculiarities of the individuals and groups comprising the organization.

Studies of organizations ranging in age from five to seventy years showed surprising similarity in development. One of the most weighty difficulties is the process of evaluation of organizational and individual effectiveness. Some attempts have been made toward objectification, as for example, through job evaluation, however, no plan has been found in operation which would evaluate the total effort, nor all of the components. Scales of measurement of organizational effectiveness are instruments of continuous improvement. They tend to remove the individual's fear and threats to his security because he is given an opportunity to evaluate himself by the same measuring stick with which his boss will judge him, and his efforts will not be wasted in defensiveness or projection, or both, but will be freely directed toward the development of improvements of the total effort.

Effective organization design consists of four distinct components. One, the *structure* of the organization. This is done on the basis of established and known needs. The basic question to be answered at this point is, "What are the *minimum* requirements to accomplish a defined total task?" The second question is, "How much can this minimum organization accomplish at optimum effectiveness?" One organization was developed to be supported by annual sales of \$4,000,000 without the need for reduction in key jobs. Yet, the same organization, without additions in key positions was capable of producing \$40,000,000 of annual sales—and did so. Second, structure alone does not produce organizational functioning. The lifeline of an organization is its *communication* apparatus. Structural organization establishes *lines of authority* and *responsibility*, but not *lines of communication*. Organization charts studied and compared with *communications* diagrams developed during the periods of inquiry proved almost hopelessly meaningless in conveying a clear picture of the cooperating company's operational process. The third component of organization is the process of *decision-making*. There are always traditional patterns which can be detected with relative ease. Of predominance is that of the executive who

delegates authority and responsibility on the *verbal* level without permitting this condition to exist on the *operational* level. This manifests itself in his interference with decisions made by his subordinates, his reservation to overrule a decision, etc. One basic reason is his attitudinal adherence to making decisions by hunch, or on the basis of hastily arrived at opinions, or on the basis of quick comparison with "similar" situations of his own experience without assuring a certainty as to the degree of similarity of the situations.

His subordinates, following a similar traditional pattern, but lacking *his boss' experience*, is more likely to make a decision which will differ from that of his boss. For the purpose of identification, this process of decision-making is termed "subjective". By the establishment of *decision rules* it is possible to provide *quantitative* bases for making a decision which will reduce the probability of making an erroneous decision. One of the more important decisions a manufacturing enterprise must make refers to the quality of its product. The statement that the quality must be "good enough" to be acceptable to the customer but not "too good" to be too costly leaves the final decision to an inspector. Essentially, it is his "judgment" that must make the choice between "good enough", not "good enough", or "too good". Under plans of Statistical Quality Control limits are quantitatively established which relieve the individual of the need for making that sort of a decision. It is established, at a high level of confidence, that the limits of acceptance lie at specified points along a given scale.

The same sort of decision rules can be applied to other areas of decision-making. This provides the person charged with the responsibility of making the decision on an *objective* basis, assures him of a determinable probability of "being right", and at the same time relieves the boss of the pressure which comes with worrying over the "rightness" of the decisions.

Finally, organization remains operationally ineffective without a basic orientation, that is an attitude of "find out". It begins with the policy-maker and is precipitated all the way down the line. It is the sort of attitude which causes him to prefer to be a "good" president rather than right. He is likely to know that he has more knowledge of his business than any other living person, more than his associates, more than his competitors—but he knows that he does not know "all" there is to be known about his business. He is intimately familiar with the why and how of his business, in effect, he is an *expert* in the things that are done well and right. What he does not know are the things that are done wrong. He will firmly say, "I don't know—but I want to find out."



This attitude of "find-out" must be developed throughout the organization. If this is accomplished to an appreciable degree, the organization itself will gain a consciousness of problem-solving which will make possible the maintenance of a high degree of Control over dynamic problems of any sort.

Essentially, an organization has the purpose of attaining specified goals. It is not enough for a president to say that a company is in business "to make a profit." The goals must be examined in terms of differences which might exist between the verbal statement of the goals and the personality characteristics which bear upon the formulation of clearly defined goals. Examinations of this nature have disclosed, for example, in the case of one policymaker who is strongly influenced by a paternalistic orientation, that the profit motive was stated as a goal of top rank but that important decisions were made by him toward the attainment of benevolent aims. It is suggested here that this is not an *evaluation* of goals. It is emphasized that goals must be consistent with the policy-maker's inner needs to be operationally effective. Next, it is essential to bring about a unity of personal goals of his subordinates with those defined as common company goals. This requires a knowledge of the needs, drives, and motivations of the subordinates.

Next, the rules of the game must be established *before* the game begins. A set of criteria must be available and known to all who are involved in the process by which the processes, their design, their execution and their effectiveness can be assessed at any time by any one. The operation of this sort of feed-back will effect the transformation of *static* design into *dynamic* organizational processes. Design will be toward an *ideal* state to be attained. It is not expected to reach this ideal. Through the operation of a feed-back it is possible to come closest to this ideal state. The mechanism makes possible the adjustment to changing conditions relating to the relationship between design and the objectified requirements of the world of reality in which the enterprise exists.

What kinds of skills are required to produce an effective organization? It will be realized that they are not usually available in an organization. It becomes necessary to decide first upon what sorts of skills might produce desired results. Which are most likely to make the largest contribution to the development of *designed organization*?

A relatively large selection is available today, a number of specific approaches have been developed. They are closely related to the professional specialty of the proponent. As one form of illustration, one might briefly examine how different men with training in different fields might be inclined to attack the project of organization, and where they might place their emphases.

An *industrial engineer* would be likely to (1) specify the tasks required to produce the end product or service, (2) he would be inclined to define what constitutes a job in terms of educational and experience requirements, (3) he would expect to fill the specified function with people



"The chief wants to know have you got a copy of November's ARMED FORCES MANAGEMENT"

having specified qualifications. The end product of his work would be an organization chart and manual covering the job title, the job function, to whom the job reports, the formal authority vested in the job, and finally a listing of duties and responsibilities.

A *psychologist* might subscribe to the idea that organization development is predominantly a matter of individuals and their personality traits. Peck and Thomson³ propose that it is possible to determine organizational design by the use of a projective test analysis⁴ a technique which seems to offer a great deal of promise in the field of executive development but appears to over emphasize the effects of personality with deemphasis on objectification, and communication.

The *sociologist* might conceivably take the premise that in organization planning one deals only secondarily with individuals but primarily with groups. Thus, emphasis might be laid on questions of leadership, cooperativeness of groups, etc. A sociometricist might attempt the development of scales of measurement of such

phenomena as 'satisfaction', 'morale', etc. and how they are related to organizational effectiveness and high productivity.⁵

It is not suggested here that any one of these approaches are ineffective, or even useless. Quite to the contrary. What is attempted to be shown is how a *combination* of these viewpoints, interests, knowledge and skills can produce results the sum of which is larger than the total of the individually attainable results.

How does a multidisciplinary team study an organization? The first step is to agree within the team as to a concept of organization. The total activities of the organizations studied were conceived as a *process*. A process is defined as a set of simultaneous and consecutive steps tending toward the attainment of a *final state*, or goal. At each step of the process there may be a set of alternatives among which one eventually becomes the next step of the process. Each step is the result of a decision, that is, it is the selection of one of a set of alternative courses of action. The efficiency of the process can be defined in terms of the contributions which the decisions make toward the likelihood that desired goals are attained.⁶

This process is studied (1) with respect to the individuals and groups who perform it; (2) with respect to the facilities and equipment employed in its performance; (3) with respect to the structural and functional organization of the individuals, groups, facilities and equipment, and finally with respect to the process of decision-making which is traditionally employed, and which would make an optimum contribution to the organization-as-a-whole. The latter two are not necessarily synonymous.

A first step of such a study is the gathering of data. Information sought is of a psychological and sociological nature to gain insight into the individuals and groups, their behavior patterns, motivations, the roles they perceive themselves to be playing, the esteem their colleagues hold of them, detection of the 'leader' in the organization, etc. Moreover, it is attempted to qualify such data to permit the establishment of a standard against which components might be compared, a profile.

Simultaneously, a communications diagram is developed to disclose the way in which each function is actually performed in the day-to-day activities of the company. This is far more revealing than its formal organization chart for it will relate the *informal* lines of communication without which no organization can operate effectively.

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and which are hidden, if not tabooed in organization charts where emphasis is placed on going "through regular channels."

On the basis of information supplied by such data, it is possible to proceed with the following plan:

1. Define and publish the company's basic goals;
2. Establish criteria for objective evaluation in terms of goal achievement;
3. Determine the minimum organizational needs of the company to achieve stated goals;
4. Produce the design of the organization in structural static terms consistent with goals and minimum requirements.
5. Define each job (as established under points 3 and 4) in terms of title, authority and responsibility, and publish such definitions;
6. Apply the criteria (from step 2) for the perpetual, objective evaluation of the effectiveness of the structural organization, of the individuals and groups comprising it, and of the forces acting upon the company-as-a-whole to which the company must adjust on the levels of policy formulation and policy execution.
7. Set in motion a feed-back mechanism (step 2 and step 6) by which the static design of structural organization may be continually transformed into a dynamic process of functional organization.

The seven goals considered a company's common or basic goals were these:

1. to make a profit;
2. to provide jobs;
3. to produce a product;
4. to utilize skills;
5. to market skills;
6. to provide the consumer with goods or services;
7. to provide the investor with a return on his investment.

Although these statements are those most frequently stated, they are but a few of a possibly indeterminate number of goals, being operative either singly or in any number of combinations. Without the top policy-maker's thorough examination of the basic aims which are to be pursued in the company under *his leadership*, it is likely that at least two conditions arise. One, ambiguity will exist within the organization as to the goals. Two, that in the absence of a knowledge of common goals, personal goals will be pursued by the executive and supervisory staffs to the exclusion of com-

mon goals. In mild cases this may merely lead to confusion, it is however, more likely that such a condition leads to heavy losses in productivity, in sales, etc. because the attainment of personal goals may preclude the attainment of common goals.

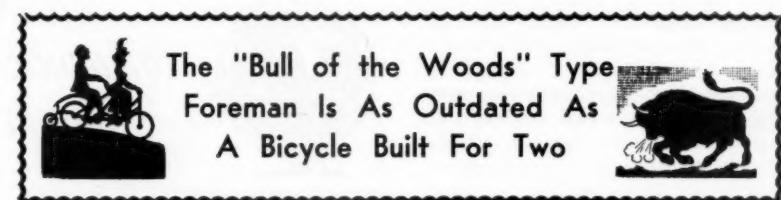
Ambiguity relative to common goals produces confusion at all levels of policy-making and policy-execution. Execution of policy is difficult, if not impossible, without interpretation of the intent meaning of the policy. In the absence of commonly applied criteria for objective evaluation, such interpretation becomes a matter of subjectivity within the framework of the interpreter's goals and his value-system, not the company's. The assumption that an employee's goals are identical with the company's is as invalid as the assumption that all companies are clear on the question of common goals.

Thus, *organization* is looked upon as a combination of complex structures; first, *organization per se*, that is the systematic arrangement, both vertically and horizontally, of the individuals who comprise it; second, the *communication apparatus*, the cybernetic structure which refers to the processes of getting things done through and with others; third, *orientation*, that is the formation of an "outlook" in those who determine the content, and in those who determine the intent of policies; finally,

the process of *decision-making*, that is not merely the *verbal delegation* of authority and responsibility, but rather the specification of quantified limits of authority, responsibility, and decision-rules.

Perhaps, the next question that arises is, "Who could competently study the many problems which are to be expected in so complex a structure?" It was discussed earlier that students of organization trained in different fields of science and technology might tend to approach a project of organization from typically varying viewpoints. No doubt, each is likely to make a contribution to the total project, but none could be considered 'all-inclusive'. The phenomena observed and the bodies of knowledge and skills required to produce the insights indispensable for the design of effective organization are too vast to be encompassed by any one person, or by any one group of people trained in the same discipline. What is required is the formation of a team of people embracing that variety of disciplines which are likely to make compositely the largest contribution to the attainment of the total task. What are these fields and skills?

Above all, as we have seen, in the organization of human, productive endeavor, one deals with *people*. Each person in the total company society has his own motivations, drives, needs, desires, ambitions,



As passé as high buttoned shoes, the Bull of the Woods variety of boss has been replaced by an entirely new breed of supervisor. Tact and psychology are replacing oversized biceps and a rumbling stentorian voice as the principle requirements of the 1955 model foreman.

The key to these modern-day qualifications is development of new training techniques such as role-playing, forced leadership and voluntary discussion. These techniques stress persuasion over mere show of authority.

Thomas Q. Gilson, Rutgers university labor-management expert, says most large firms have abandoned the "old idea" of personnel being recommended by their superiors and then coached in their new jobs by their predecessors.

Present-day training methods are

more efficient, more democratic, and more conducive to success, according to this expert.

Role-playing, he said, involves acting out by trainees the roles of others in a problem situation. The acting is spontaneous and gives observers a picture of attitudes and reactions under changing conditions, he said.

Forced leadership involves splitting a group into small sub-groups, each assigned a problem to solve and report to the entire group. In the process a spokesman or "leader" emerges. The process is repeated so everyone gets a chance to be a leader.

In voluntary discussion, case studies illustrating application of a particular principle are used in order to show potential supervisors or executives that there may be many answers to a single given problem.

frustrations, etc. They bear significantly upon the way he will tend to behave and upon the responses he is likely to produce to given stimuli. The psychologist can competently gain insight into these and related questions.

People exist as individuals but also as parts of groups. This refers not only to the groups, cleavages, cliques, etc. which form within an organization, but it also suggests the cultural, social, professional, fraternal, etc. groups outside the company setting which may bear significantly upon the behavior of the individual. The knowledges and skills required to deal with these aspects of organization are available to the sociologist.

Third, one deals with structural framework of organization by which tasks are determined and systematically arranged to facilitate the performance of organized, human productive effort. The skills and techniques required to accomplish this task are those of the industrial engineer.

Four, the people who comprise the organization work *together*, this implies a flow of information. The clarity of what is intended and what is actually understood depends upon the degree of reciprocity of communication which is attained. Thus, communication does not merely refer to the initiation of action by means of orders, as is customary in military organization, but it refers to attempts to predict the communicability of a message, and to the degree to which it *will* be understood. This is operative not only in the *internal* communication apparatus but also in the *external*. Dealing with such problems is the field of the general semanticist and communications theorist.

Five, throughout the design and administration of organization we are concerned with *measurements*. To measure means to mathematify. Hence, the presence of a mathematician on a multidisciplinary team.

Finally, it is the fundamental purpose of organization to accomplish *work* at all levels. *Ergonomics* is defined as the application of scientific method to the increase of the effectiveness of work, that is the increase in the rate of productivity together with increases in the pleasure, satisfaction, etc. of work. Thus, it is the objective of the ergonomic approach to problems of work, of which organization is the most fundamental, to consider work with respect to all objectives of all its participants. The breadth and depth of this approach cannot be accomplished by one science. Thus the ergonomic team is of a very particular kind,

and the ergonomic approach calls on the contents and methods of all sciences from logic and mathematics to the behavior sciences. An ergonomic research project, and a "quality control" of the research itself. Research itself is work, hence, there is no reason why it cannot be studied as such. Ackoff states,

"This study of research itself is the subject matter of methodology: The Science of Scientific Method,"⁷

The methodologist thus concerns himself with the design and control of the research, such as, "What team composition is likely to make the largest contribution to the total effort?", "What is an optimum team?", and many others.

The basic structure of an ergonomic team now becomes evident: Methodologist, mathematician, general semanticist, industrial engineer, sociologist and psychologist.

The concept of organization refers to the degree of interaction of its constituent parts. This is expressed in functional as well as structural terms. The functional aspect of organization, as has been shown, refers specifically to a division of labor among and within departments. The functional effectiveness is, in turn, a function of the chain of communica-

tion, and of the explicitness with which both authority and responsibility are (a) defined, (b) delegated, (c) accepted, and (d) executed. The line of authority must be clearly and precisely defined, and it must coincide with the line of responsibility flowing in the opposite direction. It is, however, not enough to merely define and indicate the direction of authority and responsibility. It is not enough to proceed with formal delegation of authority and responsibilities. To produce a smoothly functioning organization authority and responsibility must be *accepted* by those to whom they are delegated, and there must be *execution*.

The structural aspect of organization refers to these lines of authority and responsibility of which an organization chart is a graphical representation. Authority without responsibility for the results of one's actions is demoralizing. Responsibility without authority to carry out the tasks for which one is responsible is not only ineffective—it is degrading.⁸

By far the most complex aspect of organizational activity is the *process of communication*. The various phases of this apparatus can be shown in outline form:

I. Internal Communication



The Armed Forces Communications Association, an organization that brings Signal Corp, Navy, Marine and Air Force members together with manufacturers, will devote its annual convention to the vital topic of "Global Communications".

Meeting at the Hotel Commodore in New York City, May 19 to 21, 1955, the Association's New York chapter will play host to the visitors.

George W. Baily, AFCA president, has announced that 35 manufacturers will have exhibits.

Telemetering Conference Also in May

The National Telemetering Annual Conference and Exhibit will be held in Chicago, at the Hotel Morrison, on May 18-19-20, 1955.

Sponsoring the conference are the

Institute of Radio Engineers, American Institute of Electrical Engineers, Institute of Aeronautical Sciences and the Instrument Society of America.

Papers for presentation at the conference will cover the following fields: Declassified Developments in Remote Control of Missiles and Pilotless Aircraft, Remote Control in Industry and Business, Instrumentation for Flight Testing of Aircraft, and New Developments in Components for Telemetry.

IRA Show in March

The 1955 Radio Engineering Show, sponsored by the Institute of Radio Engineers, will be held at the Kingsbridge Armory in New York, March 21 to 24.

Over 700 radio and electronics firms will have exhibits.

- A. With the Past
- B. In the Present
 - 1. Information
 - a. Vertical—Within Groups
 - b. Horizontal—Among Groups
 - 2. Orientation
 - a. Knowledge of Others' Information
 - b. Morale
- C. To the Future
 - 1. Recording of Present Experience
 - 2. Development of Leadership

II. External Communication

- A. To the Outside
 - 1. Sales
 - 2. Advertising
 - 3. Public and Trade Relations
- B. From The Outside
 - 1. Through Publications
 - 2. Through Personnel
 - 3. Through Training Programs
 - 4. Through Research

Communication with the Past can be briefly described as the use of past experience in the solution of present problems. Such communication depends upon the availability and existence of records which are both *descriptive* and *evaluative*.

Communication in the present is the transmission of information *within* groups. This involves a knowledge on the part of each individual of what his task is and how it is related to the

task of the group to which he belongs. Moreover, it involves a knowledge on the part of the supervisors of how the tasks are being carried out. Second, communication in the present concerns communication among groups. This involves a knowledge on the part of each group of what its task is and how it is related to the tasks of other groups and to the total task of the organization-as-a-whole. Obviously, it involves a knowledge on the part of policy-making management of how the group tasks are being carried out.

Not all communication is strictly *informative*. One important aspect of communication, as was pointed out earlier, is the *formation of an outlook* in an individual, his *orientation*, as a member of an organization. Important complements of this sort of communication involve a knowledge on the part of each individual of where and what information is available; it also involves such tangibles as *morale* of the individual; for example, a knowledge of the opinions which other members of the organization hold of him, social intercourse among members, etc.

Communication to the future is the systematic recording of present experience in a form which will increase the efficiency of future decisions.

Paralleling the *internal* communication process in an organization there is operative a similar *external* communication process the components of which are advertising, public and

trade relations, and research. These appear to be largely selfevident. However, it is not quite so commonly recognized that personnel policies and procedures may be designed to provide channels of communication to and from the outside. Rapoport points out that there are many other aspects to the general field of communication theory. He states,

"In fact, the subject forms today an entire field of inquiry with its own areas of research and specialization."⁹

One of these aspects he seems to have made reference to is a concern not merely with what a message (order, directive, description, etc.) is intended to convey but equally to what the recipient of the message will understand it conveys. In effect, a message conveys what the recipient understands (thinks, feels, etc.). A lag between these is likely to exist. Its anticipation is an important aspect of communication as it affects organizational design and execution.

An organization in the daily pursuit of its objectives is constantly and at all levels confronted with the necessity of making *decisions*. These decisions take a large variety of forms, and are often not recognized as components of the process of decision-making. The approval of a part by an inspector is a decision. So is the acceptance of a sales contract, the enactment of a production schedule, the issuance of a purchase order. It can thus be seen that the notion of decision-making is inseparable from that

Saving Lives

(Continued from page 5)

relationship in serving as a part of the Navy in war. With the setting up of this basic support plan, we have also completed an intensive program to record in inventory accounts all material and equipment not required for use. Through this means, and a special house cleaning covering most of our installations, we have disposed of nearly all of the obsolete or no longer needed accumulations of past years. Now, with the help of other agencies concerned, I feel that we have completed the more laborious groundwork for good supply management.

For financing of our principal industrial activity, a special fund was authorized in 1949 and a complete commercial-type accounting system has been installed so as to put this activity on a self-supporting basis. The following year, we gathered the central direction of fiscal and statistical services and supply under a

comptroller at our headquarters. The comptroller staff also coordinates our budget preparation and analyzes the financial results of operations for review by the officers primarily concerned. In 1952, the comptroller concept was extended to the organization of the district staffs which serve our major field commands.

To insure prescribed standards of readiness, discipline, cleanliness, and safety, we have long carried on operational inspections of units. But with the rapid pace of changes in recent years, there was a realization of the need for a continuous internal audit to serve not only to keep me advised of the progress made in installing the new procedures but also to assist in training the field accounting staffs. Therefore, in 1951, a small internal audit staff was set up under the comptroller's direction. Now that several annual audit cycles have been completed, I am firmly convinced that internal audit is indispensable to insure financially sound practices and to reveal areas needing more intensive

management-directed emphasis.

Aside from the Coast Guard's own efforts, we have enjoyed extensive assistance and cooperation by the Department of Defense in encouraging Coast Guard participation in over-all programs such as material standardization and cataloging and in cross-servicing agreements. Because of our close relationship with the Navy, many of the arrangements for this participation are through Navy management channels.

In this brief outline, it has been impossible to pay tribute to the many individuals in our organization who have contributed to these relatively rapid management strides. Also, I know that, with time and with personnel continually alert and receptive, there are many areas in which we can make further gains. To me, the participation of our personnel in the Armed Forces Management Association, the Federal Government Accountants Association, and similar voluntary groups provides a most favorable ground for reaching this goal.

of delegation of authority and responsibility and from that of objectives, or goals. While a clear formulation of objectives becomes prerequisite to effective decision-making, it is also true that the two major obstacles in proper division of work and delegation of authority and responsibility, namely, the delegator's psychological ability to delegate, and the delegates' ability to accept and assume a delegated degree of authority and responsibility. The common sense notion of *clarity* which often involves dictionary-style definition, grammatical elegance, etc., is not enough. What is required is a formulation which enables everyone involved in a decision to evaluate alternative courses of action relative to the objectives and to evaluate the degree to which the objectives have been approached.

For example, to say that "more cooperation" is an objective is to provide no basis for the evaluation of a program of organization. On the other hand, if it is specified how—through the division of labor—the efficiency of a given task can be increased, an expected measure of cooperation is given. This perhaps emphasizes that the *design of a process of decision-making* not only facilitates the executability of a subordinate's assigned task but it also facilitates the policy-maker's task-distribution. A majority of policy-makers have been found seemingly unwilling to assign authority in proportion to assigned responsibilities. Examination of such cases revealed the fact that authority was considered a "right to make decisions". When these policy-makers attained clarity that authority could be considered a "responsibility to make 'right' decisions" their reluctance to delegate authority appeared no longer as an unwillingness but rather as a psychological inability which can be rationalized by the policy-maker. With the support of mathematically-predictive decision-rules, assuring a maximum of "right" decisions, these policy-makers quickly overcame inner blocks to authority-delegation. The president who was theretofore plagued by constant worry over the uncertainty of whether his subordinates made "right" decisions finds that the removal of this uncertainty not only makes the decisions of his subordinates more effective, "righter" so to speak, but also his own.

An organization is considered a miniature society with its own history and cultural patterns subject to the same social laws as any other type of society. Hence, due attention is given to the factors which affect the cultural development of a company. The



The Armed Forces are well represented in the Washington Chapter of The National Association of Cost Accountants. The Army team consists of the Past National President, Howard C. Knapp, Francis B. Collins and Lloyd Murray. The Navy shows Mr. James E. M. Brown, M. E. Finney, John E. Becker, Vance Johnston, Russell Aelson, John Bulwinkle, Andrew Dollard, Lt. Cmdr. R. Hayden, James J. Cooke and John Ward. Air Force representation is by Reggie Kassebaum and William C. Barber.

characteristics of the cultural structure which develop through the years of existence are largely determined by the personalities of those leading the enterprise. Several such forms can be distinguished. At the extreme ends of this spectrum are the *autocratic* and the *democratic forms of administration*.

An *autocratic* form of administration is characterized by the way in which the policy-maker "gets things done". Policy is laid down by directive from him, there is little delegation of authority, and all subordinates, even at the top echelon, are held strictly accountable to the top executive for the execution of their responsibilities. In such a culture personnel is selected—either consciously or unconsciously—to insure *maximum submission* to the authority in command, and *minimum deviation* from the policy line.

In a company where the top policy-maker is characterized by a *democratic* orientation policy is determined through consultation with the individuals concerned. Responsibility is defined and assigned with the consent of those assuming it. Authority is delegated to make possible the implementation of assigned tasks and the assumption of responsibility. Personnel is selected to insure mature assumption of responsibilities. Policy is

administered democratically at all levels. It is emphasized, at this point that although *democracy* is usually defined as administration or government which is delegated by, and responsible to those who are governed, no business organization can ever be truly democratic in the political meaning. Since administrative authority is delegated by stockholders to the managers who in turn are responsible to the stockholders but not to those over whom they hold administrative authority, in a business setting this classical definition of democracy does not hold true. However, this need not suggest that an organization cannot be democratic in the sense that the administrators know, understand and consider the needs and wishes of those under their management, and that top policies are determined on the basis of the greatest good for the greatest number, consistent with accepted goal-emphases.

Between these two extreme forms of organizational cultures lie, of course, many possible combinations and variations. For example, a *paternalistic* orientation on the part of the chief executive creates a culture which partakes of aspects of both, the autocratic and the democratic forms of administration. Paternalistic management can be likened to the "father of the family". He is deeply concerned with the welfare of the total family group. But because of his superior experience and wisdom he decides what is "best" for the family on the basis of his evaluation and interpretation of their needs rather than on the basis of their own estimate of their needs and wishes. If his interpretation coincides with theirs, as may well be the case, no conflict will arise. However, if the "family" differs in their views from the "father" as to what is best for them serious conflict and rebellion are certain to arise.

Although responsibilities may be assigned authority for decisions rests ultimately with the "father", and it is he who rewards and punishes rather than experience itself. Thus, learning how to *please* the paternalistic president ("father") becomes more important than learning the intrinsic consequences of any sort of behavior. This places a premium on techniques of *defense* and *ingratiation* rather than on techniques of *effective behavior*. The process of personnel selection in an organization dominated by a policy-maker of paternalistic orientation will tend to favor those who are rather more dependent than those capable of mature assumption of responsibility and mature use of authority. The newly selected will be less independent. Because of their dependency they

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Thus, it may be seen that the processes by which organizations develop—whether by design or by default—are intimately affected by the cultural patterns peculiar to the company. Moreover, it can be seen that these cultural patterns are strictly created by the orientation of the personality which provides the leadership in the organization. None of this is ever revealed on an *organization chart*, nor even on a *communications diagram*.

After such insight has been gained into the *structure and function* of an organization, the question arises, "How can an organization be *designed*?" Above all, one must begin to think in terms of a distinction between what is *descriptive* and what is *evaluative*. To say of a company president that he is an autocrat, or democrat, or paternalist, is not to evaluate him. This does not say that any one of these are good, bad or indifferent. It is clearly a *description without being an evaluation*. On the operational level, it is merely a classification of characteristics which affect the cultural form of the administration. *Designing* organization to increase the effectiveness of organized, productive human effort, must proceed on the basis of the "best" characteristics of those involved in the process. It has been found that the most important personality in the organizational process is the man who provides the top leadership.

Basic to both functional and structural aspects of organization design is the provision for planning, execution, and control on *all* organizational levels, both *horizontally and vertically*. By horizontal is meant within echelons, by vertical is meant from echelon to echelon.

Planning implies first, the definition of goals; second, the enumeration of alternative courses of action toward the attainment of these goals; third, the choice of one alternative which will accomplish the goal most efficiently. Planning must begin at the top and move in a downward direction rather than from the bottom up. It begins with the recognition and formulation of broadly generalized company goals. These form the foundation for the what, the how, and the why. It is obvious that the operations of a company will vary with the varying placement of emphasis upon any one, or any combination of goals. It is equally obvious that unless the company remains solvent none of the other aims can be achieved. Unless absolute clarity of goals exists, and is disseminated

through the entire organization, it is possible that the attainment of one goal may preclude the attainment of others. For example, if the *primary* emphasis in a company is upon providing jobs as it has been found in paternalistic company cultures and the *secondary* emphasis upon marketing a product with *de-emphasis* on making a profit, then, the attainment of the first will eventually prevent the attainment of the others.

Again, it is not enough to produce verbal agreement. One company president stated his primary goal as that of making a profit. A cursory examination of a number of decisions made by him in a two week period indicated the predominance of benevolent paternalism as guiding his decisions. Illustrations are his reluctance to approve the retirement of an old employee because the president had knowledge of his private indebtedness.

Execution implies following the plan neither so rigidly that contingencies are not allowed for, nor so flexibly that the plan is altered in its basic conception. The decisions made on the basis of the planning steps must be *carried out*. Execution at the top level takes the form of delegation of both authority and responsibility. Obviously, it is impossible to define the areas of authority and responsibility where ambiguity predominates regarding a knowledge as to what is to be accomplished by the assumption of responsibility. It is equally obvious that it is impossible to assume such responsibility without knowing what one is to be held responsible for. Moreover, it is axiomatic that it is impossible, no matter how well defined it may be, to make and execute decisions within the defined area of

responsibility without an adequate measure of authority.

The resulting difficulties are amplified as it becomes necessary to delegate responsibility and authority to more and more subordinates to accomplish smaller and smaller tasks.

Control implies the provision, first, of adequate *feed-back*, and second, for predetermined criteria by which the plan and its execution can be evaluated, and by which inherent errors in planning and execution can be detected and corrected. Consequences of the lack of such controls are demonstrated in the insecurity of high-echelon executives, resulting in personal conflicts, breakdown of cooperative effort, absence of reciprocal communication. Those responsible for the work and behavior of these executives seldom recognize the reasons behind behavior patterns which manifest themselves in this manner but tend to misidentify insecurity as inability, or permit a shifting of responsibility for this existence to lower echelon subordinates. This results in an overloading of top management with decision-making which should be an essential component of lower echelon management.

The operation performed in the execution stage must be evaluated objectively. Objectivity is accomplished by formulating evaluative criteria in the planning stage. Any plan, no matter how well conceived nor how carefully executed, will contain inefficiencies. It is important to the success of future operations that such inefficiencies be *systematically* recognized, analyzed, and fed back into the total process. In this way *future* planning and execution may profit from past errors.

Organization Planning is a tool of policy-making management. It has been found that evaluative techniques are seldom if ever employed. One reason for the absence of such techniques lies in the mistaken notion of many top managements that *control over "all" activities is maintained "at all times"*. This notion implies that Organization Planning, Execution and Control are *static and independent* of each other, whereas in reality they are indeed an *interdependent, dynamic process*. The latter implies that the task of organization planning is a continuing one.

A second reason has been found in a *lack of desire* for such dynamic control which appears to be a consequence of a specific goal-emphasis.

The consequences of failure to develop and maintain dynamic control techniques over *planned* organization are demonstrated in many ways. A



The Art of Living Together

By Ellen A. Butterworth

The art of living together
is the art of all concerned—
Of all the arts most difficult
it never seems to be learned—
Every day bring a new problem
and another point of view—
But a little give and a little take
will outline what to do—

number of examples may be given: First, the experience of the paternalistic executive who, through the years, had developed a second echelon of managers reporting to him without delegating a measure of authority equivalent to responsibilities. Final decisions were made by him instead of by his vice presidents. This led to a *misdentification* among his staff of where in reality authority was vested. Their experience had shown that all important decisions were made in the boss' office which thus became symbolic of authority. This developed the strong desire on the part of his subordinates to succeed him to the top job. In order to remain in his favor, stronger and more forceful techniques of ingratiations were developed. This



AIR FORCE OFFICER NAMED TO EDITORSHIP

According to an announcement by Brigadier General Otis O. Benson Jr., USAF (MC), president of the Aero Medical Association, Colonel Robert J. Benford, USAF (MC), will take over the editorship of that organization's official publication, the *Journal of Aviation Medicine*. He will succeed Dr. Louis H. Bauer, first commandant of the U.S. Air Force School of Aviation Medicine and founder of the Aero Medical Association.

Colonel Benford, a native of Omaha, Nebraska, was a member of the staff of the Omaha World Herald prior to attending the University of Nebraska College of Medicine. During World War II, he was air surgeon of the XX Bomber Command, the first B-29 organization to attack the Japanese mainland. Later as commander of the AAF Aero Medical Center in Heidelberg, Germany, he was responsible for collecting all available scientific and historical information concerning wartime achievement of Luftwaffe flight surgeons. He was appointed the first Air Force editor of the Armed Forces Medical Journal on July 1, 1953, and currently holds that position.

led to *defensiveness* and *projection*, to the magnification of one's own difficulties and to the minimization of the other's difficulties together with a magnification of other's mistakes. Planned organization and the indispensable creation of an *orientation toward solving company problems* is now relieving this situation. Since the assignment of an equal measure of authority the vice presidential staff is gradually changing its behavior patterns to a sort which will effectively increase the efficiency of the total company. Yet, they derive a fuller measure of satisfaction from their own jobs. Reciprocal communication is operative. Cooperation toward common goals is growing.

Other exemplary symptoms may be found in the repetition of similar mistakes; in the absence or inadequacy of selective and evaluative personnel practices; in the failure to set sales potentials and means to reach them; in the trend of a rising break-even point; or in the unreliability of the decision-making processes. The latter may be illustrated by an example of engineering cost estimating. The co-operating company obtains its business on the basis of firm bids. These bids are based upon cost estimates developed from *preliminary engineering drawings*. The final engineering job is a part of the estimate. The problem was seen as one of maximizing the company's yield, that is to say, to increase the number of contracts resulting from submitted bids, and at the same time maximizing the company's gross profit. The variables involved were

t = hours spent in drawing estimate for proposed job;

c = cost per hour to obtain estimate;

p = probability of getting the contract;

k = estimated cost of job to the bidder;

k' = actual cost of job (if contract is obtained) to bidder, independent of estimated cost.

k'' = contract price of job

G = gross profit from job.

The gross profit is expressed as

$$G = p(k'' - k') - (tc)$$

and the values for p , k' , and k'' are functions of t , as follows,

When the enemy has failed in all other artifices, he will propose friendship; that under its appearance he may effect what he could not compass as an open adversary.

—Saadi: *The Gulistan*

$$\begin{aligned} k &= g(t) \\ k'' &= h(t) \end{aligned}$$

$$p = f\left[\left(\frac{tc}{k'}\right), (k'')\right]$$

To maximize gross profit, an optimum value of t is sought. This can be obtained by obtaining the derivative of G .

$$\frac{dG}{dt} = \frac{d[p(k'' - k') - (tc)]}{dt}$$

$$\frac{dG}{dt} = d[\{f\left(\frac{tc}{k'}\right), (k'')\}],$$

$$\frac{(k'')] + \{h(t) - g(t)\} - \{tc\}}{dt}$$

$$\frac{dG}{dt} = d[\{f$$

$$\left[\frac{tc, h(t)}{g(t)}\right] \{h(t) - g(t)\} - \{tc\} \over dt$$

It is determined if $\frac{dG}{dt}$ is a maximum. If it is, set $\frac{dG}{dt} = 0$, and solve

for t . The value thus obtained will maximize the Gross Profit. Values for f , g , and h , can be obtained from an analysis of existing records.¹⁰

In summary, organizations develop by *natural processes*. Such development is seldom to the *best interests* of the significant majority of those involved in the organizational process.

An approach is shown here which produces superior results mainly because it rests upon a systematic and unbiased study of the *reasons behind* organizational problems. By such inquiry policy-making management is provided with *insight* into the psychological, social, economic and engineering aspects of organization as an integrated, internally consistent, methodology.

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The Association this month, due to the many requests received by the membership secretary, has decided to publish for your information the address of each Chapter. The balance of our pages we have relinquished to enable you to read The Evinrude Story.

WASHINGTON CHAPTER — Mr. Tom Kouzes, 2116 Scroggins Road, Alexandria, Virginia. (350 members)

BALTIMORE CHAPTER — Mr. Bernard Aiken, The R&D Command, c/o Comptroller, Army Chemical Center, Maryland. (139 members)

CHEYENNE CHAPTER — Major Darrell C. Boyd, USAF Quarters 94, Francis E. Warren Air Force Base, Cheyenne, Wyoming. (34 members)

NEW YORK CITY CHAPTER — Mr. Theodore R. Demsky, Room 508 Building A, Brooklyn 50, New York. (63 members)

SOURDOUGH CHAPTER — Miss Jean Coman, Headquarters Alaskan Air Command, APO 942, Seattle, Washington. (148 members)

AMARILLO CHAPTER — Mr. B. W. Nichols, Headquarters 3320th Technical Training Wing, Amarillo Air Force Base, Texas. (12 members)

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MAC DILL CHAPTER — Mr. T. A. Sames, 5219 Jules Vern Court, Tampa 9, Florida. (19 members)

PHILIPPINE CHAPTER — Mr. Lewis H. Nelson, Headquarters 6424th Supply Group, APO 74, San Francisco, California. (29 members)

WRIGHT BROTHERS CHAPTER — Colonel Lloyd I. Martin, 20 Well Drive, Page Manor, Dayton, Ohio. (108 members)

FAMA SAMA (Europe) CHAPTER — Mr. George J. Mayer, Headquarters SAMA (E) Box 205, APO 30, New York. (36 members)

SAN FRANCISCO BAY CHAPTER — Mr. Bernard Kahn, Building 38, Office of the Comptroller, Headquarters 6th Army, Presidio of San Francisco, California. (18 members)

A B E R D E E N P R O V I N G GROUND CHAPTER — Mr. Walter G. Held, Administrative Assistant to Chief of Staff, Wing 3, Headquarters Building, Aberdeen Proving Ground, Maryland.

Ole Evinrude

(Continued from page 13)

your books, Ole." Ole mopped away the perspiration on his face and went back happily to the machine shop, out back.

Poor Ole was having a terrible time.

In the first place he was in love and didn't know what to do about it.

In the second place the new venture went badly for lack of capital to support it.

And in the third place, the Old Fellows kept goading and prodding him—"Farther, Ole."

The Motor Power concern failed. Ole abandoned it. He was licked now. His father had been right after all. Ole should have stayed on the farm.

Ole was a failure.

At his lowest ebb, busted, whipped, desolate, Ole's gods had not yet deserted him. They whispered to him again: "Bess . . ."

Bess Cary . . . the same, constant one, who'd gone to school clear through the eighth grade and went out looking for a job after her parents died and someone had to look after the Cary kids. Bess, tiny Bess, never husky, but awful brave. Six Cary kids besides herself to look after and she with that Irish heart of hers assuming the job without a qualm or a complaint, and without a cry for help—at age 13.

She was the oldest of the Cary tribe. It was her job to provide. She went at it by taking a short business course. Before that famous tree grew in Brooklyn there was one of similar stamina that grew in Milwaukee.

There was Bess . . . always Bess. The only thing Ole held against her was that she got through the eighth grade, while he had got no farther than the third grade himself.

"Bess . . ." the Old Fellows kept whispering to Ole.

Ole did not ask her right away. He went back to his old trade as pattern-maker in an old beat-up shop near Milwaukee's Kinnickinnic river. It was typical of Ole that he would not ask another to help him unless he had something to offer in return. That's why he waited until he had a little money before he asked Bess if she would be his wife.

The family history does not record how it was when Ole asked Bess. Family histories universally omit such details. Bess said, "Yes." She loved the guy, but he didn't know it. When she took him for better or worse, the shy Ole was the most astounded man in all Milwaukee.

Bess was about knee high to a grasshopper. She had great courage. She hated a fight and never ran away from one. Her brother Russ, now superintendent of the pattern division of the big Evinrude plant in Milwaukee, remembers about the wedding:

"Ole was so bashful that he couldn't bring himself to stand up at a big fancy wedding. He came and got Bess one day and brought her home after the two of them said

they were married. That's all there was to it. We all wanted to be at the wedding, but Ole was too bashful. Sure . . . we all knew they were daffy about each other."

Maybe it was the Old Fellows who persuaded Ole to take his wife that way. After all, those Old Fellows had encouraged many a Viking to raid the exposed coasts of the British isles, and many an Irish, Cornish and Scotch maiden went back to the land of the fjords the wife of a Viking.

Bess was 20 years old when she let Ole kidnap her. She married a man who was almost broke, who had failed twice to convert his mechanical genius into hard cash.

Bess took over the job of mending Beata Dahl's rib-knit socks, and Ole Evinrude, at 29, had found his lodestone.

The Old Fellows must have loved

how things were going now. They kept chanting: "Farther, Ole . . ."

It was easier for Ole now.

He had Bess!

Ole flung himself into his work as pattern-maker. He had a little shop near old Ferry and Pittsburgh streets in Milwaukee. J. C. Busch, retired machine shop owner tells how it was. His eyes dance when he speaks of Ole Evinrude:

"He was a crackerjack, a hell of a square man. What he didn't know about gas engines nobody knew. I was in debt over my head and rented Ole shop space. He was poorer than I. I trusted him. He never forgot it."

"That old shop was torn down long ago. It was just a dump. Ole got his power from a belt going up through the floor. He heated it with a pot-bellied stove. I've seen him stay with a job until he

staggered on his feet. He'd forget to eat."

"His wife would phone him and urge him to come home for supper. He'd say: 'Soon as I can, Bess.' Then he'd go back to work and keep going until he licked the job."

Busch, an old man now, in failing health, repeats:

"He was a crackerjack. I trusted him. He never forgot it."

A year after Ole and Bess joined forces, their only child, Ralph, was born.

Three mouths to feed now, and Bess was not well. There were doctor bills. There was the endless job of pattern-making for others. The family history thoroughly and accurately records the next step in the emergence of Ole Evinrude as the creator of the first successful outboard motor—

Shortly before Ole had asked Bess and she had said "Yes," the

MANAGEMENT SELF-EVALUATION



Beginning in this issue a guide for the self-evaluation of management designed to point out general areas where appraisal will be most profitable, will begin. The questions posed in the sixteen parts are valuable only if they provoke thorough analysis; simply answering them accomplishes little. All of the questions to come may not seem to apply to every element of a given organization. Before they are discarded, however, they should be reviewed carefully in connection with the doubtful element. In using this guide, remember that emphasis should not be placed on detailed answers. Rather the effort should be toward effective use of the management tools and programs that apply. A thorough evaluation of a possible management weakness may permit an appreciable savings in manpower, ma-

terial or money. It is believed the check list will be most effective in—

1. Developing a new organization or reorganizing an existing one.
2. Appraising activities on a day-to-day basis.
3. Making a management survey or audit of an organizational element.
4. Identifying program and operating problems, developing solutions, and installing improvements.

A. Objectives, Programs, and Policies

1. What are the principal objectives, programs, and policies of the organization and what is the authority for each?

2. What does each objective contribute to the essential mission of the organization and what would be the consequence if the function were discontinued?

3. What methods are used to assure that policies are adequate to obtain objectives and are consistent with program goals?

4. How is the accomplishment of objectives assured?

5. Is there any duplication or overlapping, either partially or completely, in any programs?

6. Are related programs coordinated?

7. Are objectives, programs, and

policies stated in concise and logical terms?

8. Are they clearly defined in writing?

9. Are they current?

10. Are they disseminated to all personnel concerned?

B. Organization

1. Are functionally related activities grouped in the same organizational element?

2. Are organizational and operating responsibilities clearly defined?

3. Are responsibility and authority decentralized to the greatest possible extent; is there any overlapping or conflicting delegation?

4. Are responsibility and accountability known and understood by operating personnel?

5. Can accountability for operating results be clearly established?

6. Are organization structure and functional statements consistent and clearly descriptive; do organization nomenclature and charting conform with the requirements of the organization?

7. What types of action must be reviewed?

8. With what other organizations are contacts made, and for what purposes?

9. Are staff organizations and assistance available to operating groups and are they used?

(Continued next month)

two of them had gone picnicking with friends to an island in one of the many lakes lying west of Milwaukee. It was August and blistering hot. Bess wished for some ice cream, and Ole went after it.

It was two miles going and two miles coming back. The going was easy. Ole, alone in the rowboat, just guided it with the wind. On the way back, facing a growing wind, Ole began to get mad. He didn't mind pulling on oars in the least, rather enjoyed it.

But he was making slow progress against the wind and Bess Cary's ice cream was melting!

Why not build a gasoline motor, hitch it up to a propeller, and stick it on the end of a rowboat? Bess and the others consumed the liquid ice cream. Ole went back to his pattern shop Monday morning and started to work on a contraption.

The contraption which he made was not the first outboard motor in the world. The Germans had built a ponderous one, and another concern had built one and put it on sale. Both had failed. Bess Cary's brother Russ remembers how it was then:

"I was Ole's apprentice boy in the pattern shop. My brother Bob, now test engineer, was shop handy man. Ole did pattern-work in exchange for material for his first motor. When he finished it, Bess said it looked like a coffee grinder.

"Ole and I took the motor down to the Kinnickinnic river at the foot of National avenue. Never will forget it. We rented an old tub for 50 cents. That was 'real money.'

"We clamped on the motor and started 'er up.

"It was in April, 1909. The big coal boats were outfitting for the season. We passed a half dozen of them tied up at the docks. The crews came running to look down at us.

"They waved and yelled, but we couldn't hear them. They'd look over the side at us going by as though they couldn't believe what they saw. They'd wave, and when Ole'd open 'er up, they'd wave harder.

"Couldn't hear a word they said. Those deck hands were all for us."

Thus it was that an audience of deckhands on the greasy Kinnickinnic river witnessed the premier of

the world's first successful outboard motor.

Ole went home excited. He poured it all out to Bess—how it shoved that old rowboat at five miles an hour! Bess said:

"Fine, Ole. What will you do with it now you've got it?"

Inventor Ole had no ready answer. He didn't like office work. Bess Cary grinned at her Ole. Here again the family history does not convey the details, but in view of what transpired, Bess must have said to herself: "Here is where I take charge of this wonderful guy who is my husband."

Bess urged Ole to go back to the shop and make another model—"Make it better. That thing looks like a coffee grinder." Back went Ole to the shop. In between pattern-making for others, he built Evinrude Motor No. 2. It started easier than the first one.

One Sunday Ole loaned Motor No. 2 to a friend. He was always loaning or giving something to a friend. The friend fetched it back Monday morning with an order for 10 and the cash to pay for them.

"H-m-m-m-mmm," said Bess.

The ten motors were made by Ole, by hand. They weighed 62 pounds and cost \$62.

Sixty-two pounds of hand-built Evinrude mechanical genius at one dollar per pound.

Orders poured in, so that Ole did less and less pattern making for others. When 25 of them had been sold and were churning up the waters of Pewaukee and other nearby lakes, Bess sat down and wrote an advertisement which was inserted in a Milwaukee paper:

"DON'T ROW! THROW THE OARS AWAY! USE AN EVINRUDE MOTOR!"

Bess had made a little study of the motor that had failed. She learned that it was not at all like her Ole's motor, and further, that the makers had adopted the slogan:

"Don't Be Afraid of It!"

Bess howled out loud when she discovered that negative slogan. Then she sat down, and with full confidence in her husband, wrote that history-making ad:

"THROW THE OARS AWAY!"

Since that ad was published, millions have thrown the oars away in favor of Evinrude-made motors.

The orders poured in. Ole was

busier than a one-armed paper-hanger. He asked J. C. Busch to help him assemble 10 motors. Busch did it gladly, and bought one of the ten for himself. Busch's ancient Evinrude has plowed up water in Wisconsin all the way from Pewaukee lake 'way up to Clam lake in the northern end of the state where he had a summer home.

Busch recalls: "I went around town telling everyone I saw about Ole's motor. I took orders for Ole. I trusted him. He never forgot me. I'll never forget him."

With the orders pouring in and Ole completely happy manufacturing them, Bess Cary took over the business helm. To the care of her young son was added the front office responsibilities. She had to see that Ole's motor was advertised and distributed.

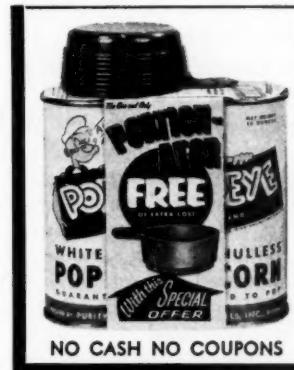
She was not well. She was only knee high to a grasshopper, a little Irish girl with fair skin and dark hair, and the courage of a lion.

By now of course the Old Viking Fellows who whisper in the rigging

POPEYE Popcorn

The PICK of the Finest Hybrid Crop—makes POPEYE a better popcorn, Tender-Tastier-Fluffier.

All types of packaging—this one with handy proportionator for perfect results.



Send request for prices

PURITY MILLS, Inc.

Dixon, Illinois

for more facts request No. 41 on reply card

of ships had opened up a direct line to Bess Cary.

Seems like they had enlisted her to help them drive Ole out of sight of land.

Seems the Old Fellows knew what they were doing when they prompted Bess to say "Yes."

Bess attended to all the details of front office management. She and Ole rented space for their factory. While Ole attended to production, Bess attended to distribution. She kept the books and wrote the ads.

She wrote the ticket.

In that first little factory things were just like they used to be when the immaculate Bess was keeping the books for Clemick & Evinrude and Ole was out in the shop wearing greasy overalls. Bess' brother Russ recalls:

"They were the happiest couple in Milwaukee. They were happy when they were broke. They were happy when they were rich."

The firm of Evinrude, or rather the firm of Ole and Bess did so well that it moved to new quarters in 1911. The Evinrude motor was a spanking success, on the way to becoming a national institution.

Ole and Bess no longer had to hunch down on the grocery bill.

In the fall of 1911 came the end of the boating season. Orders dwindled, disappeared. And there were Ole and Bess with a full-fledged factory on their hands. They had people working for them who had to be paid every week. They were people just like Ole and Bess, with families to raise, mouths to be fed. They were loyal, faithful people. They had to eat.

The Evinrude market had been largely in the States.

Bess studied what to do. While Ole worked in the factory on Walker street, Bess went on a still hunt for new markets. She wrote scores of letters, most of them shots in the dark. Bess' letters were mostly unanswered, though some firms took the trouble to write that they were not interested.

Those letters were breaking Bess' heart.

Then an amazing thing happened. One export company delivering goods to Norway and Sweden decided to risk "taking a few motors." As it turned out, the

export company couldn't get enough Evinrude motors to supply the overseas demand. The people of the fjords went for Ole Evinrude's motor as unerringly as Ole had sailed his own boat on Lake Ripley.

It was unbelievable. The Evinrude plant was running full blast. All the employees met their bills, and the Evinrude Company like a prize fighter almost counted out, was on its feet—winning!

How that shot in the arm came about is another incredible chapter in the Evinrude saga. Knowing it makes one wonder if the Old Vikings were on the job in that New York export office.

An official of the export firm had read Bess' letter. He did not bother to answer it. He dropped Bess' letter into his waste basket. It lay there until a young clerk in the firm, Oluf Mikkelsen, a Danish immigrant, saw it while he was discussing other matters with his superior.

The name Evinrude at the top of the letterhead attracted him. Idly, curiously he picked the letter from the waste basket. Evinrude was a name that sounded like home. Who were these Evinrudes out there in Milwaukee?

Young Oluf Mikkelsen, who knew his Scandinavia, smoothed out the crumpled letter and persuaded his boss to take a chance on the Evinrude motor. The boss was sold and in no time at all young, sharp Oluf Mikkelsen wrote a letter which started out:

"Mr. B. Evinrude—"

In the course of time, bright young Oluf Mikkelsen, who himself had gone hungry in New York looking for work, formed the outboard



Letter

A young soldier was hit by a bullet in a battle. Thinking he was mortally wounded, he whispered to a friend:

"Write to Mamie. Give her my love, and tell her my last thoughts were for her. Carbon copies to Sadie, Peggy and Kathleen."

distributing house of Oluf Mikkelsen. Ole and Bess liked him and today the Mikkelsen establishment on New York's Fourth avenue stands as a monument to the vision of a young immigrant who picked a letter from B. Evinrude out of a waste basket.

By now the Old Viking Fellows were laughing out loud—"Beata Dahl's little Ole shipping motors back to Norway where he was born!"

For three years, the firm of Ole and Bess poured outboard motors at the world. Competitors, savoring the rich scent of quick profits, came and went in the picture. The name Evinrude went round the world. So well did Ole and Bess deliver the goods that to this day Evinrude is synonymous with outboard, just as Kodak is with camera.

Ole and Bess turned out thousands of motors—Bess in the front office, Ole out back testing each motor in a tank to make sure it was perfect.

They were very happy. They had come a long way....

For years the partners were terrifically busy. Even in their hours of relaxation. Their summer place at Oconomowoc Lake, with its big boathouse and fleet of boats was practically a laboratory and test course for the factory.

Ole engineered many new Elto models. As interest in racing grew, he designed fast motors.

In 1928, again boldly stepping beyond the field, he brought out the first four cylinder outboard. Instantly it became the fire ball of the outboard world. It was the granddaddy of all the blue-blooded "fours" which are today the pride and joy of the Evinrude organization.

These were crowded years for Bess. Elto was becoming "big business," and no longer could one person handle the details of finance, sales, advertising.

But she was a great team player, too. She hand-picked many young men, trained them, taught them, encouraged them. Made them managers of sales, advertising, export, accounting. And, cool and smiling at the big double desk in the partners' office overlooking the Milwaukee river, she helped them do their stuff.

I call, therefore, a complete and generous education, that which fits a man to perform justly, skillfully, and magnanimously, all the offices, both private and public, of peace and war.

—John Milton

This was truly a partnership. She valued Ole's opinion above all others. Never was a major decision made, an important distributor appointed, without thorough discussion with Ole.

With the Elto organization stepping faster and faster, in 1929 the logical thing happened. The Evinrudes' old company, and their new one, were joined in happy marriage, absorbing a third manufacturer in the process, and Ole became President.

Then Bess faced and made a difficult decision. As far as business was concerned, she made up her mind that it was time to dissolve the partnership. She had helped Ole to the topmost rung of the ladder. Now there were many able men, many trained by herself, all devoted to Ole, to carry on for her. She was tired, and she was not well. Ole moved into a big new front office, but there was no Bess smiling across the big desk.

Bess' health began to fail in the early 30's. She had worked hard. When she took a turn for the worse, Ole's heart was on the ground. Bess died at 3 a.m. It was Saturday, May 18, 1933. Ole walked round and round the block, desolate.

It could be that the Old Viking Fellows were on the job again that night, whispering to Ole as he walked. It rained a little, a chilling rain from clouds swept across Lake Michigan by a south east wind. Ole walked alone in the rain.

His heart was on the ground and those who knew him best think he was never again his old self.

Outwardly there was no visible change in Ole after Bess' death. He went back to the big plant north of Milwaukee's Capitol drive. Once more his blunt right thumb measured off on a carpenter's rule, and bright young research engineers in the plant wondered how it was that he could calculate to the thousandth of an inch in that fashion.

Some days he sat in the front office just doing nothing. It made little difference now, in the plant. The Evinrude company was so thoroughly founded, so well-manned, so efficient, that it plunged along famously. Actually, it was bigger than Ole or Bess ever dreamed it could be. The perfect partners seem never to have known completely how well they had built.

Ole was shyer than ever now, his old friends recall. He clung to his old friends of the struggling days. He took them with him in the Bess Emily III on long cruises. He was like a man looking for something lost. He even tried to smoke a cigar or two, but gave it up, explaining to his friend Fred Huehns: "Don't like it. I had enough of tobacco when I was a boy sorting it in a warehouse."

To keep himself busy he overhauled the Bess Emily III engines himself. He attended lutfish church suppers. Fred Huehns says: "Ole would drive 200 miles to take in a lutfish supper." He busied himself with amateur photography and marksmanship. He developed a fine skill with a pet Mauser, but declined all invitations to go big game hunting. He could not bring himself to slay warm-blooded animals, but had no qualms when it came to hauling in lake trout.

Fred Huehns invariably prepared the lakers for Ole. Fred recalls:

"The only way to prepare a lake trout is to broil it. I'll give you the recipe some day. Ole and I knew better than to bake a big lake trout."

Never talkative, but a good listener, Ole talked less than ever after

Bess died. Big, friendly Fred Huehns, who can talk a blue streak, tried hard to make it appear that things were "just like they used to be." Never, after Bess died, did Fred mention her name in Ole's presence; nor did Ole. They kept up the fiction of "everything as usual" until, Fred recalls:

"Ole came to see me. When he walked up the steps I knew something was wrong. Mind you, I've seen Ole tired many times, like when he was just starting out and working hard enough to kill an ordinary man.

"I said 'Ole, what's the matter?' He said: 'I'm just a little tired, Fred.' That's the first and last time I ever heard Ole Evinrude admit he was tired. I knew something was wrong, but I didn't know any way to help. I knew he was a lonely man. What could I say, or do about it? You just don't barge in on a man like Ole with advice. He was living by himself.

"I said: 'Ole, let's go catch the biggest lake trout in Lake Michigan and have a feed.' He said he was too tired. He went home, and I never saw him alive again. Several days later, I picked up the paper. He died suddenly. Only one thing ever happened to me that upset me more than that. I lost a boy in the war."

Fourteen months after Bess died the Old Fellows came for Ole.

There was a great-to-do. Newspapers assigned star reporters to write the story. Officials, engineers, draughtsmen, mechanics and the floor sweepers and janitors in the Evinrude factory went to the funeral.

Tool-makers, carpenters, truck drivers, electricians, molders were there. Every good mechanic in town was there.

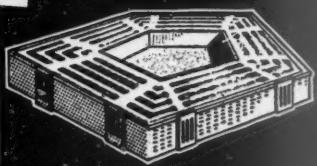
The Old Viking Fellows had Ole all to themselves now. They had not deserted him. They took him in and whispered:

"Bess."

I think that's how it was.

(Parts of this fascinating story of Ole Evinrude are reprinted by permission of Evinrude Motors, Milwaukee, Wis.)





Washington Management

Department of the Navy—A fixed-price contract for the construction of two landing ships, dock, to the Ingalls Shipbuilding Corporation, were recently announced. These larger and faster LSD's will have a length of 510 feet, displacement of 12,150 tons and cost \$14,945,000 each.

Department of Defense—Defense spending during fiscal year 1954 recently released shows an interesting insight into big business. The Defense Department spent just under \$41 billion out of a total federal government expenditures of \$67½ billion. A break-down by services shows some \$464 million to the Office of the Secretary, \$15.7 billion to the Department of the Air Force, \$12.9 billion, Department of the Army and \$11.3 billion to the Department of the Navy including the Marine Corps.

Department of Defense—The Defense Department's conservation program has resulted in savings of millions of pounds of strategic materials during the past year in addition to the sizeable dollar savings. One innovation has been the placing of "conservation contracts," which usually deal with an entire unit of complex equipment, such as a turbojet aircraft engine.

Department of the Navy—Announced the awarding of a new contract with Lockheed Aircraft Corporation for 46 P2V-7 Neptune Aircraft, the fourth order for the Navy's No. 1 submarine hunter-killer since the P2V-7 was announced in 1954.

Department of Defense—Defense Secretary Wilson recently ordered the Army, Navy and Air Force to spread out their defense orders to avoid concentrating them in the plants of a few suppliers.

Department of the Army—Secretary Robert T. Stevens recently released some startling facts on Army spending. The Army spends \$30 million a day, has fixed assets of \$43 billion and carries an inventory of one million items, says the Secretary. "The Army operates more than

300,000 transportation vehicles and last year shipped overseas 13½ million tons of freight, plus a like amount within the United States. We've also done away with the old idea that everything the Army bought had to go to the warehouse and be transhipped to the post, camp or station. We do it now the way many distributors do. A contract is placed with the manufacturer and the shipments are made direct from the plant to the using installation."

Department of Defense—Secretary of Defense Wilson announced recently the Fiscal Year 1956 Manpower target for the Armed Forces would be Army, 1,000,000; Navy, 650,000; Air Force, 975,000, and 190,000 for the Marine Corps.

Department of the Navy—Guided Missile Destroyers, to be known as DDG's, may soon be introduced to the fleet. Details concerning the new type ship are classified and it could not estimate just how soon they would actually be placed in operation. Two cruisers, the USS Canberra and the USS Boston, are undergoing modifications which will make them the first guided missile cruisers in the fleet.

Department of the Air Force—A meeting of the 16-man Small Business Advisory Committee was held in the Pentagon by Assistant Secretary Roger Lewis on 28 January, 1955. Problems in connection with contracts to Small Businesses were discussed.

Department of the Navy—The Navy has unveiled a sleek 600-mile-an-hour seaplane designed for mine-laying, bombing and reconnaissance with the jet age agility of landplanes. The first multijet seaplane in the world, the P6M Seamaстер, was described as the spearhead of future seaplane striking forces which will operate in or near enemy waters independently of aircraft carriers or foreign bases. Developed by Martin Aircraft, Baltimore, Maryland, the Seamaстер is a far cry from the ungainly, lumbering flying boats of the past.

VF-13 'Steals' a Cougar

Grumman Visitors Plane 'Accepted'

Bill Cochran, Grumman engineering service test pilot, was on a lecture tour of Naval air stations recently when he almost had his plane "stolen" by mechanics of VF-13. It all started when he landed at Cecil Field and taxied his Cougar into the flight line of the squadron and reported to the CO, Cdr. L. E. "Blood" Doner.

He had lunch and then gave the squadron pilots a familiarization lecture on the F9F-8 Cougar. The squadron was in the process of changing over.

After the lecture he went out to the flight line to secure his plane for the night but couldn't find it. He scouted the squadron area and found that VF-13 mechs were getting it ready for acceptance. The jet's tail had even been painted a light blue and dotted with 13 large white stars. The nose section had been vividly painted and a large squadron number and insignia had been added.

Cochran flew the Cougar back to the Grumman plant at Bethpage with all its trimmings. On this flight he set an unofficial speed record of one hour 54 minutes for the 1,200 miles at 635 mph.

Lockheed Appoints Washington Manager

Lockheed Aircraft Corporation today announced that Vernon A. Johnson has been appointed Washington, D.C. manager for the company.

A member of the Washington office staff since 1947, Johnson held the position of public relations executive assistant to John E. Canaday, public relations director, and also acted as an assistant to the president.

As Washington manager, Johnson will continue in his capacity of assistant to President Robert E. Gross and also will retain his responsibility for Washington public relations representation.

He takes over the post formerly held by John L. Hill who is being transferred to Lockheed's California Division headquarters in Burbank to become manager of the Military Sales Department.

PRODUCTS

*designed to deflate
production Costs*

As a service to OPERATING DEPARTMENTS and PURCHASING OFFICERS, ARMED FORCES MANAGEMENT will provide you with a selected list of manufacturers' products.

A Products Information Library has been established and descriptive literature, catalogues, and reference material is available to you without cost or obligation. The firms have been carefully selected, have a high standing in their respective line, and deserve consideration. They are NOT, in each case, advertisers in ARMED FORCES MANAGEMENT, but each offers you a service or product which we feel will be helpful in your operation. Operating and Purchasing departments are respectfully urged to take advantage of this service.

How to Use Armed Forces Management's Library—

Inserted in this issue, a postage free card is provided for your convenience in requesting descriptive and informative literature. This will be forwarded to you, without obligation. Many cost saving ideas are generated by Operating Departments that have referenced information on products available. Purchasing Officials will find this type of information invaluable. All that need be done is: fill in name and address, circle that which will assist you, and drop in the mail.

WINSLOW ENGINEERING COMPANY. Engine owners and operators can acquaint themselves with the design, construction and characteristics of the WINSLOW "CP" replaceable filter elements used in full-flow filter installations. "CP" or controlled pressure is an exclusive WINSLOW built-in system making it possible for hot or cold oil to pass through the element instead of the by-pass under contaminated element conditions.

For more facts request No. 1 on reply card

BARBER-COLMAN COMPANY. A new catalog, F 4344-1, describing permanent magnet direct current motors with outputs up to 1/10 horsepower is available to Engineering and Electronic Officers in the Armed Forces. These motors are ideally suited to power electro-mechanical actuators, transfer switches, and programming devices for use as tachometer generators.

For more facts request No. 2 on reply card

THE W. H. BRADY COMPANY. Dotted Line Aisle Markers by BRADY, outlast painted lines on warehouse and shop floors 5 to 1.

These new BRADY self-sticking aisle markers cost less to buy, apply and maintain than any other marking method. Four vivid colors and sizes, designed to resist abrasion, dirt, acids, oils and solvents.

For more facts request No. 3 on reply card

WHEELER PROTECTIVE APPAREL (see cut). A completely new line of aluminized asbestos clothing has been introduced this month, which includes complete firemen suits, gloves, leggings, sleeves, aprons, helmets and many other items. The new line, made of Underwriter's grade herringbone weave tropic weight asbestos which is treated to give it an aluminum coating, is shown in a catalog available to military installations.

For more facts request No. 4 on reply card

MINNESOTA MINING & MANUFACTURING COMPANY. New pressure-sensitive colored film tapes possessing unusual strength although only 2-mils thick, are gaining widespread popularity in industrial marking, labeling and decorating.

For more facts request No. 5 on reply card

LYON METAL PRODUCTS INCORPORATED. This leading manufacturer for over 50 years of steel lockers, steel shelving, storage cabinets, shop boxes and miscellaneous equipment, has fifteen district sales offices strategically located throughout the United States to serve all military installations.

For more facts request No. 6 on reply card

TESTOR CHEMICAL COMPANY. Manufacturers of the well-known TESTOR household and model cements, have a new 1955 catalog for Exchange Officers with a complete line of these popular priced items.

For more facts request No. 8 on reply card

BALLYMORE COMPANY. This organization, long recognized by industry as leaders in the safety step ladder field, offers a new catalog with complete specifications and



THESE PAGES ARE BEING READ

by most of the 20,000 subscribers of

ARMED FORCES MANAGEMENT

the only monthly horizontal magazine to all of the Defense Services and the only horizontal one with a products section of cost-saving equipment.

Your inquiry will have special value if you mention this magazine when writing advertisers. Not only does it identify you as one of the men the advertiser wants to reach . . . but, more important, it will help make possible enlarged future service to you as a reader.

prices on their complete line to Armed Forces installations.

For more facts request No. 9 on reply card

WILLIAMS GUN SIGHT COMPANY. This world famous manufacturer of gun supplies, including Receiver Sights, Scopes and Mounts, Targets, Loading Equipment, Parts and Cleaning materials, has an excellent "Shooter's Catalog No. 5," for the nominal cost of 25 cents.

For more facts request No. 10 on reply card

AMERICAN MACHINE & FOUNDRY COMPANY. A low cost home workshop vise capable of solving any workholding problem in the home, garage or shop and modeled after the noted line of AMF Float-Lock Safety Vises for industry has recently been introduced by the American Machine & Foundry Company. The flexibility of the new AMF Float-Lock Mity 7 Vise eliminates the need for at least a half dozen specialized tools. It retails for \$9.98.

For more facts request No. 11 on reply card

MODERN POWER SWEEPER COMPANY. The new MODERN power sweeper capable of sweeping 45,000 square feet per hour is designed of heavy steel construction and powered by a 4-cycle air-cooled gasoline engine. Exclusive dust control features with direct blower mountings, make this easy to operate adjustable height sweeper a must for military installations. Riding sulky and wall brush attachments optional.

For more facts request No. 12 on reply card

AMERICAN PHOTOCOPY EQUIPMENT COMPANY. A low cost complete photocopy department all in one 20-inch unit, the APECO AUTO-STAT brings to each military organization an electrically operated machine requiring no installation capable of photocopying anything written, printed, typed, drawn or photographed in less than 45 seconds. A new free booklet is available showing how time and money can be saved with this lifetime service guaranteed unit.

For more facts request No. 13 on reply card

EQUIPTO, DIVISION OF AURORA EQUIPMENT COMPANY. This leading manufacturer of factory and shop equipment for the past forty years, have a booklet

entitled EQUIPTOGRAM No. 191 that is available to installations with parts storage or inventory control problems. Flexible, efficient steel shelving can solve these problems and eliminate wasteful, needless costs.

For more facts request No. 14 on reply card

WEBER AIRCRAFT CORPORATION. (See cut). A special oven and storage buffet developed by this corporation may prove a major contribution to the supplying of hot meals to the Armed Forces. The Weber buffet stores 90 complete



foilpack meals under refrigeration and can cook five meals piping hot every 15 minutes. Shown in this photograph, the buffet is being tested aloft by the United States Air Force.

For more facts request No. 15 on reply card

COFFING HOIST COMPANY. Pushbutton control, separate load and motor brakes and foolproof limit switch are features of cable type QUIK-LIFT electric hoists. They range in capacity from 500 to 4000 pounds and offer a choice of lifting speeds and types of suspension. Latch on safety hook is held in place by a lock under spring tension and fits over point of hook so no point or projection can snag on objects it passes. Slight pressure on release unlocks the latch and spring tension holds it open.

For more facts request No. 16 on reply card

EXIDE INDUSTRIAL DIVISION, ELECTRIC STORAGE BATTERY CO. The new model M Lightguard gives instant adequate lighting whenever normal lighting is interrupted regardless of reason. The Model M has a two-rate charger-high rate or trickle. The Exide battery, designed for long life, easy maintenance and dependable operation, can be plugged into any standard 115 volt outlet.

Each lamp illuminates up to 10,000 square feet.

For more facts request No. 17 on reply card

MULTI-MATIC CORPORATION. A new one-man operated portable earth boring machine capable of boring holes up to 16-inch diameter, is available to military installations. The super Hole-A-Matic is electrically operated and has a wide variety of additional uses.

For more facts request No. 18 on reply card

HARNISCHFEGER CORPORATION. A new gasoline engine driven arc welder with a capacity of 20 to 200 amp is featured by Model WN-150 arc welder powered by a two-cylinder, air-cooled engine close coupled to a welding generator. This variable speed engine which covers full heat range is designed to give long service under adverse conditions. Unit weighs 425 pounds and measures 45 inches long by 20 inches in height and is available with two wheel mounting.

For more facts request No. 19 on reply card

BAUSCH & LOMB. The differences in binocular design and performance . . . tests you can make before you buy . . . facts that will help you select a binocular best suited to your own use . . . are all explained clearly in a 32-page booklet "Binoculars and How to Choose Them," for interested military personnel.

For more facts request No. 20 on reply card

LEWIS-SHEPARD. The newest Master Line Materials Handling Truck, the battery powered handy hoister which provides lift speeds up to 25 feet per minute with 1000 pound loads is described in a booklet available to service installations. Storage battery has a built in charger and can be recharged from any lighting circuit. This single control operated truck is ideal for warehouse and ammunition stacking.

For more facts request No. 21 on reply card

MUNCIE GEAR WORKS, builder of Outboard Motors since 1929, announced recently the new 1955 Neptune "Mighty Mite." This 17 pound precision designed outboard has 1.7 hp with features found usually on larger motors, moisture proof magneto, siphon

cooling and underwater exhaust. Dollar for dollar . . . pound for pound, you can't beat Mighty Mite for safe, dependable boating.

For more facts request No. 22 on reply card

MOMAR INDUSTRIES of Chicago has introduced a completely new blue print rack, called the "Glider." It has already received high praise from architects, contractors and engineers who have installed "Gliders" in their offices. As one architect said, "The 'Glider' blue print rack is really engineered to bring order out of chaos amongst our blue prints, in our drafting room and field offices." Contractors and engineers have demonstrated their enthusiasm by buying "Gliders" for their offices even though this item has just been placed on the market.

For more facts request No. 23 on reply card

BIG-JOE MANUFACTURING COMPANY have a new 8-page booklet on battery operated hydraulic lifts for loading, unloading, stacking or moving up to 1000 pounds.

For more facts request No. 36 on reply card

ECONOMY ENGINEERING COMPANY—Engineered and designed Hi-reach telescopic platforms available in standard models from 10'-9" to 35' with custom-built units to 100 feet. Maximum stability, safety and smooth, time-saving lift action are yours when this equipment is in use.

For more facts request No. 38 on reply card

BUCKINGHAM TRANSPORTATION, INC.—This safety-conscious motor carrier has hung up some enviable safety records, collected a lot of awards, and keeps its fleet rolling over the highways of South Dakota, Nebraska, Wyoming, Minnesota, Montana and Colorado, meeting commitments of an ever-increasing business.

For more facts request No. 37 on reply card

EVINRUDE MOTORS—The news from Evinrude is, that for 1955 their 15 H.P. Fastwin and 25 H.P. Big Twin will be "aquasonic"—which means they have the best noise-silencing devices yet developed. Continued for 1955 are the 7.5 H.P. Fleetwin Aquasonic, and the 3 H.P. Lightwin. For all mod-

els, a complete line of remote controls will be available.

For more facts request No. 40 on reply card

PURITY MILLS, INCORPORATED—offers direct to Commissary and Exchange Officers a guaranteed popcorn canned for worldwide shipments.

For more facts request No. 41 on reply card

RICHMONT, INC.—"The Home of Torque" presents a new heavy duty torque wrench, The Livermont. Weighing 9 pounds, just over 37 inches long, the wrench is safer, more accurate, and faster to use. Finished in bright chrome, it can be used for many kinds of construction, maintenance, and repair work.

For more facts request No. 39 on reply card

MANNING BACHRODT CHEVROLET—has a new car deal that should be of exceptional interest to returning servicemen. The firm offers big discounts on all 1955 Chevrolet models. Accessories are offered at once-fourth off. They also have a lay-away plan.

For more facts request No. 43 on reply card

BLACKHAWK HOTELS, Hotel Saint Paul and Hotel Lowry in St. Paul, Minnesota, Hotel Blackhawk, Hotel Mississippi, and Hotel Davenport in Davenport, Iowa, and Hotel Jefferson in Peoria, Illinois, offer Armed Forces Personnel the most modern accommodations at reasonable rates.

For more facts request No. 44 on reply card

MINIFON—A pocket-sized recorder that will take dictation, notes, on-the-spot interviews, as well as many other functions, is a natural for busy executives—it eliminates written reports! With recording fully controllable, this compact product of Geiss-America will record for 2½ hours.

For more facts request No. 42 on reply card

BURROUGHS CORPORATION—recently released a new recorder and reader, named MICRO-TWIN. This new machine now offers a recorder and reader for the usual price of just a recorder. Tremendous savings have been reported, both in time and money, particularly in record keeping and storing.

For more facts request No. 90 on reply card



Minifon works unseen—in your pocket! Clearly records your words—or those of others—for up to 2½ hours at a time. Takes dictation, notes, on-the-spot interviews, speeches, meeting memoranda. Eliminates written reports for busy executives! Recordings are fully controllable, easy to edit or erase, re-usable—and may be mailed as letters. Minifon works on battery or AC, plays back through its own headphones or any radio speaker, has playback control for typist. Write for information.

minifon

world's only POCKET SIZE recorder

GEISS-AMERICA - DEPT. AM-2
CHICAGO 45, ILLINOIS

For more facts request No. 42 on reply card

CUSHMAN & DENISON MANUFACTURING COMPANY. Manufacturers of the famous Flo-master Felt-Tip Marker in bold or fine lines now offer a complete range of ten colors in Flo-master inks to permit speedy and accurate marking for steel drums, tools, parts, pipes, glass and cloth.

For more facts request No. 24 on reply card

WILLIAMSON MOTOR COMPANY. A leading Ford automobile dealer in Northern Illinois for years, Williamson presents their completely new 1955 line with the latest design and safety driving features.

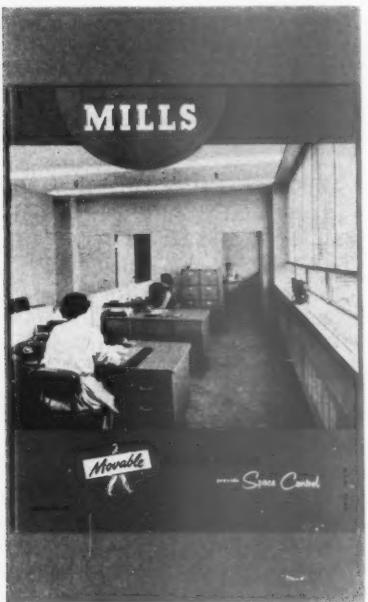
For more facts request No. 25 on reply card

GARD INDUSTRIES. A brand new product by Gard Industries, Inc., one of the nation's leading aerosol producers, is GARD ANTI-RUST SPRAY. Packaged in GARD'S handy push-button container, this new rust proofer contains silicones and polar compounds specially formulated to prevent

rust and corrosion in outdoor storage for a year, and, in indoor storage, for five years. Completely compatible with all lubricating oils, it can be polished or left intact as sprayed. It will apply directly to wet metals displacing all water present.

For more facts request No. 26 on reply card

THE MILLS COMPANY. (See cut). With over 30 years of experience exclusively devoted to the manufacture of movable walls and partitions, have available to military installations their new 1955



catalog. More than 50 photographs of Mills installations, together with detailed information on their design and construction features including specifications are included in this informative 68 page book.

For more facts request No. 27 on reply card

THE RICKRAFT CO.—Many contractors, engineers and architects have felt for some time that an improvement was desirable in membranes for use under slab and over crawl spaces. The Richkraft Company of Chicago, Illinois, has recently made definite advancement in the design of such a paper known as Richkraft 65. This paper is definitely one of the major improvements in membrane waterproofing in the last ten years. The Richkraft Company has long been connected with the construction industry and is well-known as a distributor of a wide range of rein-

forced waterproofed papers, black papers and reflective insulation.

Richkraft 65 has been accepted by the F.H.A., the V.A., and the U.S. Corps of Engineers as a water vapor barrier under concrete slab on the ground in lieu of felt or 55# membranes and for over crawl space where the slab is not poured on the ground. Richkraft 65 is made by laminating two tough sheets of kraft paper together. The kraft sheets are pre-treated with a special fungicide in accordance with Housing Research Series No. 15 H.H.F.A.

Usage has proved "65" a more economical sheet. Actually, costs have been lower laid down than for two layers of 15# felt mopped, or 55# roll roofing. It is claimed Richkraft 65 is the lowest cost membrane laid down capable of standing up under fungus and mildew. A large part of the low cost is due to speed of application. Two men can do approximately 14 houses (1000 sq. ft. each) in 8 hours. This compares with 3 men required to do 7 houses in the same time using 15# felt mopped together.

Richkraft 65 comes in sizes to assure the best in economy. Rolls 36" and 48" wide with 432 sq. ft., and rolls 72", 84" and 96" with 1000 sq. ft. are available at distributors everywhere.

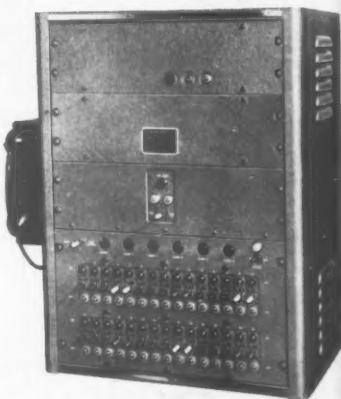
For more facts request No. 28 on reply card

THE GEORGE W. BORG CORPORATION. (Equipment Division). (See cut). A new precision 10-turn Micropot Potentiometer for commercial and military applications became available late last month. This new 1100 Series Borg Micropot is specifically designed for original equipment manufacturers of precision electrical devices. Lead wires are provided instead of terminals. This permits greater flexibility of application and added ease of installation without changing the

present wiring system. Wiring problems are simplified. Leads are nine inches long, flexible and color coded for easy assembly. Rear shaft extension is optional for both single units and ganged installations. Shaft is firmly supported on two bearings located at either end. Standard resistance values are from 50 to 100,000 ohms. Available in independent linearity to an accuracy of 0.1% to 0.5%.

For more facts request No. 29 on reply card

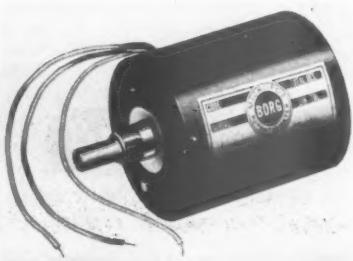
PACIFIC DIVISION, BENDIX AVIATION CORPORATION. (See cut). An accurate digital supervisory control system expressly de-



signed for both remote measurement and for such control functions as remote shaft positioning, on-off switching, and proportional control has recently been introduced by the Pacific Division of Bendix Aviation Corporation. The system, known as Electro-Span, may be used in conjunction with any electrical transmission medium, including telegraph circuits, telephone lines, VHF radio or microwave links. Voice communication can be time shared where voice channel bandwidth exists.

For more facts request No. 30 on reply card

GARD INDUSTRIES. Servicemen who often have to battle the elements will welcome a new product called GARD. A weatherproof spray that can be applied from an aerosol can, it can be sprayed on all kinds of clothing and equipment—in fact, on anything from the most delicate fabrics to leather. When applied to shoes and coats it almost doubles their life. Keeping water out it lets air in and allows



body moisture to evaporate. A 5 ounce can retails at \$1.25 or the 11 ounce economy can for \$1.95.

For more facts request No. 31 on reply card

ROURA IRON WORKS. The Roura Self-Dumping Hopper is said to cut hand unloading costs by at least 50%. This well-known hopper fits any standard fork or platform lift truck and is available mounted on live skids-casters with malleable or rubber tired wheels. Ranging in sizes from $\frac{1}{2}$ to 2 cubic yards the Roura self-dumping hopper, which has proven itself in hundreds of leading industries, can save your installation dollars.

For more facts request No. 32 on reply card

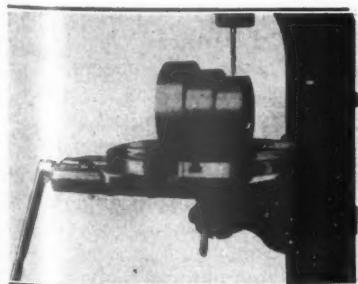
MARVEL INDUSTRIES, Inc. Manufacturers of the well-known LIFT-O-MATIC power truck attachment, have details for interested military installations, on this simple automatic attachment. One operator can attach or remove unit without tools, in only 2 minutes. No pallets are needed and additional operator controls are unnecessary.

For more facts request No. 33 on reply card

INDUSTRIAL CRANE & HOIST CORPORATION. Interesting literature is available on the Industrial Moto-Trolley, the original packaged motor driven trolley. Adjustable to accommodate a wide variety of beam sizes, it may be easily attached to standard electric hoists.

For more facts request No. 34 on reply card

MODERN MACHINE TOOL COMPANY. (See cut). This manufacturer of the Safety Drill Table offers two management features as



reasons for installing his equipment. (1) They save time. (2) They prevent accidents, broken drills and scrap. Regardless of what drill press you have, it can easily be equipped with



NEWS BRIEFS

from the

SERVICES

ARDC Wright Air Development Center, Dayton, Ohio. Air Force pilots and other crew members will soon wear fiberglas helmets as standard flight equipment in jet fighters and bombers. With the fiberglas helmet, the accessories can be made to exact measurements, and it is unaffected by heat, cold or age.

United States Air Force Academy, Denver, Colorado. Lt. General Hubert R. Harmon, Superintendent of the Academy, in answer to many inquiries, recently outlined their timetable. The first class of 300 students will enter the temporary academy at Lowry Air Force Base in July, 1955. The second class of 400 students will arrive at Lowry in the summer of 1956. By 1957 he said, "We hope to move our permanent quarters to Colorado Springs, and by 1958, we will have four full classes for the first time. Eventually we will reach our peak of 3000 students."

United States Coast Guard. The Coast Guard is inviting young enlisted men from all services to apply for cadetship at the Coast Guard Academy at New London, Conn., where the four-year course leads to a degree in engineering and a commission as an ensign.

Ninth Naval District, Great Lakes, Illinois. Rear Admiral Emmet P. Forrestal has assumed command of the Ninth Naval District. A 1920 graduate of the Naval Academy, Admiral Forrestal has been the Commander of the Service Force in the Atlantic Fleet, until this assignment.

Seattle Port of Embarkation, Seattle, Washington. Colonel E. Jeff Barnette has assumed command of SPOE. This management-conscious officer has directed port operations

a Safety Drill Table. A unique guarantee that Safety Drill Tables will save their cost in labor alone every six months is yours.

For more facts request No. 35 on reply card

at Army ports around the world from the Southwest Pacific to Europe.

Seventh Air Force, Honolulu. Major General Sory Smith, Pacific Air Force Commander, announced the reactivation of the 7th Air Force with headquarters at Wheeler Air Force Base. The 7th will be the first major unit assigned to the Pacific Air Force. It will take active control of Air Force bases and units in the Central and Eastern Pacific.

Exercise Snowbird, Alaska. The joint Army and Air Force training maneuvers in Alaska are approaching the mid-point in the exercise. The largest mass parachute drop of men and materials ever attempted in Alaska and the construction of a packed-snow airplane runway on frozen tundra, were the features of the maneuver. In addition to Army and Air Force units stationed in Alaska, the 503rd Regimental Combat Team of the 11th Airborne Division was flown northward from Fort Campbell, Kentucky.

Surgeon General USAF, Washington, D. C. General Otis O. Benson, Jr., of the United States Air Force Medical Service, and currently head of the Aero Medical Association, announced recently that this organization would hold its 26th annual meeting at the Hotel Statler, Washington, D.C., from March 20 through 23rd, 1955.

USS Thetis Bay CVHA, San Francisco, California. A face-lifting is in store for this famous WWII "jeep carrier," and early in April she will become the Navy's first assault helicopter transport. The helicopter transport, designed for use by the Marine Corps in amphibious landing operations, is expected to enhance the assault power of the fleet.

Alameda Medical Depot, California. Plans are being finalized to transfer facilities at this Depot from the Army to the Department of the Navy who will use the installation

to increase the warehouse facilities of the adjoining Naval Air Station. Common Army and Air Force storage and issuance of medical supplies will be transferred to the Army's Sharpe General Depot at Lathrop.

Langley Air Force Base, Virginia. A new concept of ground support was demonstrated recently at the headquarters of the Tactical Air Command when an audience of TAC and officers of other commands were guests of General Edwin S. Chickering at a demonstration by the 405th Fighter-Bomber Wing of a multi-purpose, self-propelled starter unit. This unit developed and engineered for the military by Consolidated Diesel Electric Corporation, and designated as MA-1 appears to be a long awaited answer to the problem.

United States Army Europe. Lt. Gen. Anthony C. McAuliffe, USA, became Commander-in-Chief of United States Army Europe in colorful ceremonies early this month. The famed combat leader of the Battle of the Bulge in 1944 is expected to be nominated shortly to four-star rank.

Fort Jackson, South Carolina. The new post exchange at Fort Jackson is a drive-in snack bar with curb girls and all the standard drive-in equipment. Brig. Gen. A. W. Stuart who cut the traditional ribbon and became the first customer, stated he believed the new drive-in was the only one of its type in the Third Army area.

Naval Air Station, Jacksonville, Florida. \$3,500,000 was recently approved for a helicopter repair facility, which will be a part of the O & R Department at NAS Jax. Construction, which will take at least a year, will start late this month.

Fort Sheridan, Illinois. The 79th AAA Gun Battalion was officially redesignated the 79th AAA Missile Battalion at Fort Sheridan during a recent review and ceremonies. The unit, commanded by Lt. Col. David G. Gauvreau, was previously armed with 120 mm. guns, and just recently converted over to missiles.

USS Midway, U.S. Seventh Fleet. Based at Norfolk the past nine years, the USS MIDWAY is off via the Good Hope route (she is too large to transit the Panama

Canal) for Far East duty with the U.S. Seventh Fleet. After six-months duty in the Far East she will go to Bremerton for a two-years' modification program, to include the angled-deck and steam-catapult changes now being installed in the USS Roosevelt.

Air Materiel Command, Dayton, Ohio. Assets of \$34 billion have been established from the first consolidated financial statement in a major military command. This program is intended to establish an accounting similar to that used by commercial businesses.

Naval Air Station, Norfolk, Virginia. The Navy's famous precision flying team, the Blue Angels, are

accepting delivery on the Grumman F9F-8 Cougar, and replacing their older F9F Pantherjets. Classed in the "over 600 mph" class the Cougar's powerplant generates more than 7,000 pounds thrust at "full-bore."

Marine Corps Air Station, Kaneohe, T. H. Leatherneck jet pilots are fast becoming skilled in mid-air refueling of their F2H-4 "Banshee" jet fighters. With in-flight refueling a Banshee can be completely fueled in a matter of several minutes, thus eliminating lost time in battle. Exercises have been conducted with Navy-supplied AJ-2 "Savage" attack-bombers carrying a special refueling kit.



Electronics Officers Schools (USN) Great Lakes, Illinois. A recent consolidation of electronics schools, combining the Electronics Material School at Treasure Island, California, with the Electronics Maintenance School at Great Lakes, is reported to have greatly increased efficiency with a reduction in costs. Officers attending the course will be junior officers from the fleet and recent graduates of the OCS School at Newport, Rhode Island.

Command Management School, Fort Belvoir, Virginia. A total of 31 top-ranking personnel of the Department of the Army graduated from the first class of the Command Management School. Each of the graduates, which included three general officers, spoke highly of the course and instructors.

U.S. Naval Hospital Corps School, Great Lakes, Illinois. Jon D. Smock, HN, Adjutant of class 14-54, was recently declared the Scholastic Honorman when he achieved a final average of 98.83 per cent, the highest average attained since March 1951. He is a graduate of the University of Chicago and served with the American Red Cross as a Field Representative prior to entry into the Navy.

Second Air Force NCO Academy, Barksdale AFB, La. Major General Robert B. Landry, Deputy Commander of the Second Air Force, awarded diplomas to 60 graduates, all master sergeants, bringing the total to 356 graduates since last April. Master Sergeant Elbert Lomax, of Offutt Air Force Base, received both the Honor Graduate and Academic Achievement Awards, the first time one man has walked away with both honors.

Army Command Management School, Fort Belvoir, Virginia. Preparations are being completed for the second streamlined three-week version of the celebrated three-month Advance Management Course at Harvard University. The second class will convene on 13 January.

Supply Management School, Ft Lee, Virginia. 34 Officers and Civilians graduated last month from the first class of the Army Supply Management Course. Major General R. W. Colglazier, Jr., USA, Director of Programs and Budget for the Office of the Deputy Chief of Staff for Logistics, spoke at the graduation exercises and presented the diplomas.

Army Quartermaster Subsistence School, Chicago, Illinois. Eighteen

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Army officers were recently graduated from the Quartermaster's Subsistence School. The five-month course in food technology and packaging is intended to give officers of the Armed Forces comprehensive knowledge of all types of food purchased for the services.

U.S. Coast Guard Officer Candidate School. Twenty-eight officers were graduated last month from the Coast Guard Officer Candidate School.

Command & General Staff School, Fort Leavenworth, Kansas. 292 student officers attending the Associate Course were recently graduated in colorful commencement exercises. General John E. Dahlquist, Chief of the Army Field Forces, was the principal speaker. Twenty-two of the students were National Guard Officers, ten were Reserves, thirty-two were Regular Army, and 228 were Reserve or National Guard Officers on extended active duty.



Using seminar, lecture and student presentation methods, Reese Air Force Base recently completed its fifth Mid-Management Seminar, with faculty members of Texas Tech and Lubbock, Texas, business executives giving a valuable assist.

Held semi-annually, the seminars stress principles, techniques and tools of management to the middle managers at Reese. This category includes top NCOs, civilian supervisors and officers from Warrant Officer through Lt. Colonel.

Aimed at making personnel more conscious of their management responsibilities, the seminar consists of 40 hours of instruction in such subjects as Public Speaking, Man-hour Utilization, Administrative principles and Planning, Organization, Counselling and Guidance, Human Relations, Communication, Group Morale, Executive Development, Military Discipline and Justice, Geo-Politics, Teaching Methods, Industrial Management,

Conference Leadership, Military Psychology, Public Relations and Machine Accounting.

Average attendance at each seminar is twenty-four students. Upon completion of the course each student is required to submit a paper on "Management As I See It". Six months after completion of the course a follow-up on each graduate is made to determine what management improvements he has implemented within his organization since completing the Seminar. On completion of the December 1954 Class, 99 have attended the Reese Seminar.

Impetus for the Seminar is furnished by Colonel C. P. West, Reese AFB Commander and Lt. Colonel Charles E. Wilson, Wing Personnel Officer, who graduated from the George Washington University Management Course in November and October 1952, respectively.

The following educators from Texas Technological College and Lubbock business men were the very capable assistants to Reese Air Force Base personnel in the important educational project: Dr. Horace E. Hartsell, Associate Professor of Education; Dr. S. M. Kennedy, Associate Professor of Government; Dr. S. J. Kaplan, Professor and Head of Psychology; Dr. F. L. Mize, Professor and Head of Management; Dr. Per Stensland, Director of Adult Education Program; Dr. M. P. Larson, Professor and Head of Speech Department; Mr. C. B. Hubbard, Assistant Professor of Management. Mr. H. L. Allen, Division Manager, Southwestern Public Service Company; Mr. C. A. Guy, Editor and Publisher, Avalanche Journal Publishing Company; Mr. W. C. O'Mara, Manager, Sears Roebuck and Company, Lubbock, Texas; Mr. L. C. Bramlette, Technical Representative, Remington Rand Company.

NICB Elects Trustee

W. W. Overton, president of W. W. Overton and Company, Dallas, Texas, was elected a trustee of the National Industrial Conference Board at the Board's 354th meeting in the Waldorf-Astoria Hotel, according to John S. Sinclair, president.



Headquarters Third Army, Atlanta, Georgia. The Third Army Utilities Utilization Program is to be credited with saving \$9.22 per soldier on power, heat and water bills at Third Army installations during fiscal year 1954.

New York Port of Embarkation. A savings of \$80,000 has been realized at NYPOE by the reclamation of 2,000,000 board feet of lumber at the Craven Point Reclamation Yard during the six months from April to October. The lumber was processed at an average cost of \$30 per 1000 board feet as compared with an average of \$70 per 1000 board feet for new lumber.

Mannheim Ordnance Supply Depot, Mannheim, Germany. Reclamation is the by-word in this far-famed Ordnance Depot. Between 60 and 80 per cent of the cost of new items, or \$300,000 each month is returned to government use.

Naval Air Station, Corpus Christi, Texas. A spot bid sale on automotive vehicles recently realized a return of 12 per cent of the original acquisition cost to the Navy. A net return of \$30,792.29 was gained from the sale of 114 vehicles.

Department of the Army. More than \$15 million during the past fiscal year has been saved as a result of money-conserving ideas thought up during that period by military personnel and Army civilian employees. 13,200 acceptable suggestions were used for improving efficiency and cutting corners on duplication and waste.

Fort Benning, Georgia. The Army's work simplification program, designed to increase efficiency and decrease operation costs, is fulfilling both objectives at Fort Benning. Statistics recently released by the Comptroller show the Infantry Center program has saved an estimated \$800,000. Almost 600 civilian and military supervisors have received training under the program.

Headquarters Third Army, Fort McPherson, Georgia. During the

first quarter of fiscal year 1955, the following conservation programs have been effected: Chemical equipment valued at \$72,224 was redistributed among installations in the Third Army Area. An estimated 8000 tons of excess coal was transferred from Camp Rucker, Alabama, to Camp Gordon, Georgia. An additional 17,500 tons of surplus coal was transferred from Fort McClellan, Alabama to Fort Benning and Camp Gordon. Engineer supplies and small tools valued at \$22,612 were transferred to the Air Force, Navy and GSA. An additional \$70,470 worth of similar tools were redistributed among installations in the seven state Army area to satisfy needs which would have otherwise resulted in expenditures.

Excess Engineer mobile and heavy equipment valued at \$454,976 was shipped to Supply Depots for redistribution. Signal items valued at \$184,842 were redistributed to meet signal requirements.

2nd Infantry Division, Fort Lewis, Washington. A revitalized conservation program within the Division is reported to be showing results far beyond those expected by the command. Each member of this far-famed unit has "caught the spirit" it is said and saved dollars as a result.

Naval Shipyard, San Francisco, California. \$3,800 each year is the savings realized by chrome plating circular saws which increases the saw life about nine times.

Post Cereals and C & C Divisions of GENERAL FOODS. A newly designed application for employment form has a detachable page containing the history of Post and C & C. Thus, the applicant can take the history section home with him to read over and learn more about the organization with which he is applying for work.

Portland District Engineer. Mr. William O. Dement, supervisory engineering draftsman at Bonneville Dam hydraulic laboratory in Portland, Oregon, has been awarded a commendation for meritorious civilian service by Major General S. D. Sturgis, Chief of Engineers. The check for \$150, presented by Colonel Thomas Lipscomb, Portland District Engineer, was for suggesting a single column, differential, water manometer for use at the laboratory.

Alameda Naval Air Station, California VP-19's "idea man," Chief Earl A. Hamilton, has another suggestion which is reported to be a new electronic configuration for the recording of audio signals in the Navy's P2V Neptune. The suggestion is now an official reality in aircraft technical bulletins.

What's NEW in Suggestions?

Bendix Products Division of Bendix Aviation Corporation, South Bend, Indiana. Employees will soon receive a new booklet describing the revised Bendix Suggestion System. Greater awards are now possible and certain limiting factors have been removed, which undoubtedly will result in more suggestions being adopted and a greater number of awards. The maximum award for any suggestion has been increased to \$1500. Interested Commanding Officers can we feel sure receive a copy of this booklet by writing to the corporation.

Fort Sheridan, Illinois. Cash awards totaling \$475 were presented recently to 18 civilian employees of Fort Sheridan for economy and efficiency suggestions. Top award of \$125 went to Mr. John O. Conner of the Post Engineer Section for a suggestion to convert a furnace cleaner into a leaf raker during the fall months. The suggestion will save approximately \$4,000 annually.

Pacific Division Mats. Technical Sergeant DeWayne D. Godfrey of 57th WRS submitted a dollar and

time-saving idea recently which is applicable to the installation of R-3350 aircraft engines. Sergeant Godfrey's improvement involves equipping rear hangars of slings with turnbuckles and lengthening prop shaft cable compensating for the added length of the turnbuckles. This improvement enables one man to do the work of the previous three, and saves forty minutes per engine change.

Rogers Corporation, Goodyear, Conn. "Yes" men are not welcome in staff conferences at the Rogers Corporation. A new rule at Rogers says: "We want no positives until we get rid of all negatives."

Fort Holabird, Maryland. Major General Boniface Campbell, Commanding General, recently presented an award to Mr. Edgar L. Heaver. The significant part of the story is that Mr. Heaver during the past 18 months has submitted 65 suggestions with 25 of them in the pay-off class. Application of his belief that "there's always a better way to do a job" has made him not only a consistent winner, but daily life a bit safer and easier for Fort Holabird personnel.

Army Stamp Sales

Army post offices overseas sold \$10,836.272 worth of postage stamps during 1953.

Big Bond Buyers

The nation's soldiers are buying United States savings bonds at the rate of \$4,500,000 a month and putting about \$3,250,000 into soldiers deposits savings accounts every 30 days.

70,000 Draw Army Pay in Retirement

More than 70,000 retired army veterans are drawing around \$15,000,000 a month in retirement pay from the government. Such pay was first authorized in 1861, when the first army officers retired. Then an officer needed 40 years service to retire. Twenty-four years later congress enacted a law granting retirement pay for enlisted members of the army.



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Book Reviews

by D. D. Corrigan

The Thread of Ariadne

"THE PRINCIPLES AND PRACTICE OF MANAGEMENT," Edited by E. F. L. Brech, B.A., B.Sc. (Econ.), M.I.I.A. (Longmans, Green and Co., 752 pages, \$12.50).

Experienced specialists in the field of management have combined their talents, under the qualified editorship of E. F. L. Brech, to present a British textbook on the newest developments of proven principles and practice of management.

This is a book for everyone. All readers will benefit; from the one-man grocery store owner, who is daily beset by the often baffling enigmas of purchasing, selling, budgeting and planning, to the president of a large concern, who is cognizant of the over-all importance of good management.

The executive will find this book a valuable source of reference. The student will discover what has already occurred in techniques of management. The teacher will supplement his education. The young man being trained for leadership will be made more fully aware of management methods. Men and women involved in specialized aspects of work such as cost distribution, market research, or job analysis, will learn the latest methods being applied to their division.

The book is divided into six sections. Mr. Brech's introduction describes the basic principles of management and includes the nature, background, terminology, foundation, structure, and practice of management, plus a review of the contributions to the evolution of modern knowledge of management, and charts of executive responsibilities.

The ensuing four sections were each written by one of the associate authors, R. M. Aldrich, A. W. Field, J. Maddock, and Frank L. Woodroffe. These men are competent experts in their field, and each contribution has been retained in the author's own words and original

presentation. This causes some overlapping of material, dissimilarity of terminology, and contradictions on practice. The writers all agree on matters of principle, and the disagreements on practice only prove this is a relatively new field, with many phases still to be explored.

These four chapters by the associate authors describe in detail the main divisions of management: Distribution, Production, Personnel and Control. DISTRIBUTION tells of sales activities, sales management, sales planning, distribution channels, sales organization, functions of the sales department, advertising, and physical distribution. Present and potential sales are the basis of industrial economy and governs all other activities.

PRODUCTION deals with activities forming the Production Division, designing the product, production administration, supervision, and auxiliary services. The transforming of raw materials into a finished product means production management must be efficiently planned, well regulated, and skillfully performed.

PERSONNEL tells the function of personnel management, industrial relations, training, promotion, terminations, physical working conditions, employee services, and taking a case to arbitration. Good employee relationship is an essential part of any organization. All executives and supervisors should be concerned not only with the manner in which they deal with people, but how employees work together as a team.

CONTROL defines the nature and purpose of control in management, outlines of control in operation, general considerations of budgets, sales budgets, expenditure budgets, application of budgetary control, cost control, and clerical management. The process of measuring the planned results of an organization with the actual results must be of prime concern to modern management.

"Management in Practice," the title of the appendix, co-ordinates the layout of management activities and unifies the four fields of Distribution, Production, Personnel, and Control. This section is of utmost importance, for each specialist is inclined to think of his division as the most important. The top executive is responsible to see that the whole organization functions as a balanced unit, and must not over-emphasize some aspects of management and overlook others.

"The Principles and Practice of Management" deserves a place in the bookshelf of every organization and should be referred to often for study, reference, and thought-provoking ideas.

Background Information

"INDUSTRIAL AUTOMATIC CONTROLS," by Millard H. La Joy (Prentice-Hall, Inc., 278 pages, \$6.65).

Basic fundamentals of all types of automatic controllers, as well as



Armed Forces

Personnel

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For more facts request No. 43 on reply card

more complex arrangements, are clearly defined in this book. Pneumatic, electronic, hydraulic—each control is accurately described and shown graphically and mathematically.

The course in automatic controls that Mr. La Joy teaches at the University of Minnesota has been received enthusiastically by engineering students. The author uses the methods he has found most satisfactory in teaching, to write an introductory treatment of industrial automatic controls.

Recommended Reading

"WAR OF WITS," by Ladislas Farago (Funk & Wagnalls, 379 pages, \$5.00).

Subtitled "the anatomy of espionage and intelligence," here is the true account of cloak and dagger techniques.

"INDONESIA, LAND OF CHALLENGE," by Marguerite Harmon Bro (Harper, 263 pages, \$4.00).

The new republic of Indonesia is scrutinized in terms of international appraisal.

"THE DEATH OF HITLER'S GERMANY," by George Blond (Macmillan, 302 pages, \$4.50).

A Frenchman tells of the last months of Nazi Germany, with emphasis on the last days of Hitler.

"FOUR KEYS TO ABLE MANAGEMENT," by Robert Rawls (The Updegraff Press, Ltd., 32 pages, \$1.00).

How to increase an employee's interest and incentive.

Figure

Professor: "If you start at a given point on a given figure and go all the way around it, what will you get?"

Freshman: "Slapped, sir."

Mean

"She's mean, all right," said a boy about his teacher, "but she's fair."

"What do you mean by that?" asked his mother.

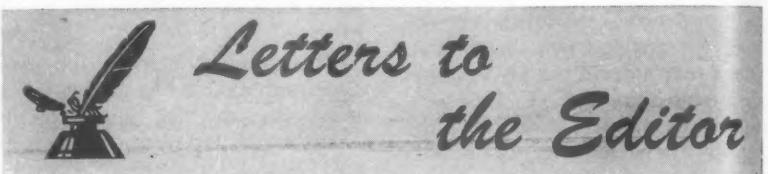
"Well," he replied, "she's mean to everyone."

Modern Technique

(Continued from page 7)

great variety of products we produce and the many regulations imposed on trade generally. Many of the firms who have been established for fifty years and over, and who have been customers of Plymouth during their entire business life, are today actively distributing Plymouth products. An inspection of

our current complete list of customers shows, for the most part, the same substantial character and stable relationship. Today five District Offices under competent and trained Managers keep in close touch with our customers. Plymouth representatives working under the District Managers' direction give customers direct Field Sales help through product information, training distributor sales-



Dear Editor:

I recently graduated from a management school full of enthusiasm and returned to my organization determined to change some of our wasteful practices and false economies. Everytime I recommend a change, written tactfully and supported by facts, I am told to run my part of the show and leave the "thinking" to others. This is very discouraging and I have tried to change my approach on the thought that this may be my downfall. Through your "Editor's Column" I wonder if others who are having or have had similar experiences will tell me how to convince my Chief that he can realize a return on the money spent to send me to school.

Sincerely,
D.E.F.

Editor: We know that the problem confronting this writer has been solved by many of our readers and hope you will lend an assist with your suggestions.

Dear Editor:

My Commanding General subscribed to 14 copies of your excellent magazine for the members of his staff. I thought you might be interested in knowing that in last Tuesday's Staff Meeting, he read to this group the article from your January issue, written by S. J. Tobin, Training Officer at the Desert Chemical Depot in Tooele, Utah. Afterwards he asked us all to cooperate in any way possible with you and your publication and

instructed each of us to read each issue with a view toward improving management in this command.

Yours truly,
G.S.P.

P.S. Could you forward me your first issue (October) to complete my file? I should be happy to pay whatever the cost. We like them all for references.

Editor: Thank you for your letter of 9 January, and we regret that it will be impossible to forward you a copy of Vol. 1, Number 1 of AFM. Our subscriptions exceeded our supply. If you are interested in a particular article, we can and will be glad to reproduce it for you.

We're
Waitin'
For You!

The door's open and we're waiting for you to drop in to tell us about cost-cutting suggestions, or conservation ideas, being used at your installation. We'd like to pass them along to our management and cost-conscious-minded readers. Of course, if you're not in the neighborhood—we're only three cents away!

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men, reporting customers needs, and assisting in merchandising programs.

Backing up the field organization is a strong merchandising department where packaging, advertising, and product promotion is developed. A great variety of service booklets, folders, displays exhibits, films, and similar material is prepared. In some cases, where an unusual condition exists "tailor-made" promotional programs are designed.

Our market studies definitely point to those markets and areas where advertising should be concentrated, and we use publications which have the best coverage in those localities. Our published advertising in 1954 reached a circulation of well over seven million readers. In addition, we keep our customers well informed through a series of Newsletters emanating from the Home Office; through a quarterly magazine, Plymouth Rope Walk; through personal contact by salesmen, District Managers, and Company officials.

The awards we have received over the years for meritorious industrial advertising and promotion, speak eloquently for our techniques in this activity.

Keeping Stockholders Informed

In the early days the Management and the Stockholders were the same people. Today the Company has over 4,000 Stockholders scattered throughout the United States and in several foreign countries. Generally speaking, we keep these Stockholders informed through our regular Annual Reports in which we attempt to fully cover the Company activities. When a special situation arises we issue an interim report.

In addition, we believe that our Annual Stockholders' Meeting is unique in United States industry. We held such a meeting regularly in Plymouth, Massachusetts, on the first Wednesday in December. We have as many as 350 Stockholders present.

Through prearranged plans most of the Stockholders arrive at the plant in Plymouth at about 10:30 A.M. All who wish (and most of them do) are taken on a specially conducted tour of the properties

during which manufacturing processes are fully explained. The meeting follows the plant tour. After the business of the meeting is concluded, the management answers all questions which the Stockholders ask, and the Stockholders and management then have luncheon together.

Many of our Stockholders have regularly attended these meetings for years, and such people as Publishers, Investment Counselors, Bankers, and Newspaper men who make it a practice to attend meetings of Stockholders of many corporations tell us that the spirit in which our meetings are conducted, and the fine relationship between management and Stockholders is unusual. I think I can best typify that spirit by quoting a resolution which the Stockholders passed unanimously at the last meeting—

Resolved:

Once again the Stockholders of the Plymouth Cordage Company, at their Annual Meeting assembled on the first day of

December, 1954, take this occasion to offer to our Management and Employees our congratulations upon the results of their operation of the Company during its last fiscal year.

We are aware that many problems and difficulties during the past year have confronted the Management of the Company.

We feel we have been indeed fortunate in the ability and loyalty of the whole organization, both Employees and Management, in successfully meeting these problems and difficulties and we desire hereby to express our grateful appreciation to the entire organization, both Employees and Management.

To each and all of you, we, the stockholders of the Plymouth Cordage Company say "Well Done."

Modern Budgetary and Control Techniques Vital Today

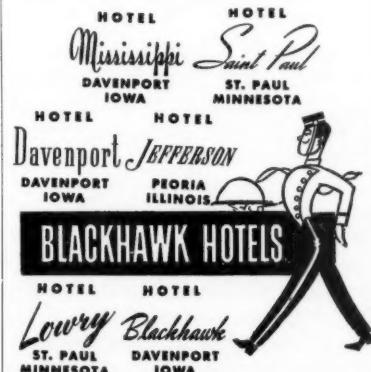
As you now know, a review of the early history of the Company reveals little of modern management techniques. The operation of the business in those early days was considerably less complex than is the case today. The determination of market potentials, the establishment and use of budget figures, the use of performance standards and accounting controls were unknown during much of this Company's life, but as those techniques were developed, they found their way into our Company's operation.

In our work of establishing market potentials, I believe that we have developed unique techniques. Our chief raw material—fiber—must be contracted for some four to eight months in advance of its arrival at our plant, and paid for at the contract price. There is no futures market in hard fibers and, to date, we have found no way to hedge our purchases. A large proportion of our finished products must be manufactured from three to twelve months in advance of their sale and consumption. A mistake in planning can be very costly either in the loss of sales on the one hand, or because of oversize inventories on the other.

Headed for the Midwest?

Perhaps you've heard how members of the Armed Forces have found the Blackhawk Hotels doubly advantageous! Budgetwise, rates are surprisingly reasonable and, being centrally located, they are conveniently nestled in the heart of activities.

Famed for smoothly superb services, their friendly, yet unobtrusive, personnel are dedicated to the primary Blackhawk tenet—your stay must be thoroughly enjoyable!



For more facts request No. 44 on reply card

In the determination of market potentials of our products we find it necessary to have different approaches for the different product groups — Rope — Binder Twine — Baler Twine — Tying Twine — Twisted Paper. For example, we find Rope volume related to various indices such as Gross National Product, the Federal Reserve Bank Index, and others, and our Rope market potentials are fundamentally based on projections of those past relationships, and adjusted by the influence of certain industries where Rope is used in large volume. Typical industries are Marine and Commercial Fishing. That technique has, for some years, enabled us to rather accurately forecast Rope sales.

With respect to market potentials of Harvest Twines. At one time all of the ten small grain crops were harvested with the Binder, which machine used Binder Twine. Today the largest part of these crops is harvested with the "Combine", a machine which cuts and threshes at one operation. The use of the Combine over the past twenty years has increased materially and cut deeply into the use of the Binder and the consequent consumption of Binder Twine. However, some Binders are still used, and our market problem is to measure that share of the harvest still using Binder Twine.

Working with the U.S. Department of Agriculture we learn, early in the year, the number of acres planted to each of these ten small grain crops. Experience has taught us that short of an extremely severe drought or similar disaster, approximately 90% of the acreage planted is ultimately harvested. Our studies have determined for us the average acres harvested per Combine by crops.

Through our work with some of the Farm Machinery manufacturers, and in conjunction with the U.S. Department of Agriculture, we learn the current Combine population. Knowing the average acreage harvested per Combine by crops leaves the determination of acreage by crops to be harvested with the Binder a matter of arithmetic. We know the amount of Binder Twine necessary to harvest an acre of each crop, and through

this process we determine the potential volume of the Binder Twine market for the coming season.

Similar techniques are applied to each group of products we manufacture and market potentials are similarly established.

Using these market studies as a basis, the Operating Committee, which is composed of the President, three Vice Presidents, the Controller, and the Treasurer, estimates a preliminary Sales Budget for the coming year. At the same time each salesman is required to make an estimate of Sales for his own territory for the coming year. District Managers review the salesmen's estimates, and when the salesmen and their District Managers are in agreement the District Managers meet with the Vice President in Charge of Sales and his staff, where preliminary Sales estimates have already been made. When the Vice President's staff and the District Managers reach agreement, the final Sales estimate is submitted to the Operating Committee where comparisons are made with that Committee's preliminary estimate, and the Sales Budget for the coming year is subsequently determined upon and approved.

Similarly, Expense Budgets are estimated, initially at operating levels, and ultimately reviewed by the Operating Committee for final approval. At the same time the Operating Committee approves the Profit Budget and the Cash Requirements Budget, and finishes with a complete budgetary program for the coming year. This overall budget structure is then

broken down into each of its component parts and those people responsible for each are furnished with their respective budget data. All of this work is completed prior to the beginning of the fiscal year.

Through this system of controls all performance is measured against standards each month. Committees, composed of the people charged with the responsibility of proper performance, analyze the records and take such necessary corrective measures as the records indicate. These records are compiled by the Controller's Office, and a representative of the Controller's Office sits with each committee. The overall performance is reviewed by the Operating Committee with such action taken as is indicated.

Obviously, the above techniques are peace-time ones. During war the need of our products by the Armed Forces demands that we direct all our facilities to defense production.

In Summary

Summed up, we believe the Management techniques employed in our Company, are, for a small Company such as ours is, modern and effective. In our case the fundamental concepts of high quality products, fair treatment between management and employees, between management and customers, between management and Stockholders, and between management and the community, are a rich inheritance which we have administered over the years through techniques dictated by changing conditions and common sense.

Safety Works

(Continued from page 9)

Where there is wilful violation of safety rules it follows that there are opposing viewpoints. Punishment of the violators may bring reluctant obedience, but making converts out of them will forever remove the necessity of further punishment. Reconciling opposing viewpoints has taxed the ingenuity of our leaders since time began. For 2000 years we have been saying, "Thy will be done," but we mostly go right ahead in our own ways. Safety, like conduct, is a very personal thing, and

it must always be so approached by the supervisor. If a man is spotted not wearing personal protective equipment in an area or at a job where recognized practice requires it, the supervisor has two courses of action, either of which may be effective: Training and enforcement. If the worker is properly trained, he will want to comply, for he is then able to recognize the need and the logic of the situation. If he is not yet so trained, enforcement will fill the gap until the idea soaks in . . . but it must be consistent, with punishment one sure alternative for failure to comply.

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You can't get anywhere by just threatening, and any error in enforcement weakens the entire program. Therefore, we de-emphasize enforcement by punishment, and counter with strenuous efforts to sell co-operation. To accomplish this takes real genius sometimes, but we have found it worth the trying.

Everyone likes to feel important, and this trait has been put to good use by setting up intershop competitions. We pit the large shops against the larger ones, and the small against the smaller. The outcome directly affects the pride and professional standing of the shop master. It keeps him on the spot, and since he is the one man in each trade who is in a position to take direct and effective action, the training aids program is directed principally to him and to the supervisors under him. When they come out of the huddle, they know the signals and the play, and they pass the word along. We try to instill the feeling that every man is on the team, that he has a personal part to play in keeping his shop's safety record clear. And we go still further in promoting that feeling by the creation of job-level committees. Periodically making educational material such as posters, warning signs, and statistics available is not enough to insure success. There

must be a continuity of application at the worker level—the man who needs to know. We get almost every man on the team at some time or other through membership on these committees. Shop pride has developed to the point where the individual having the accident, as well as the master, suffers a loss of prestige. There is a big stir in the shops when the monthly report is posted . . . and the report had better be correct right down to the third decimal place, too, or there is a bigger stir! The safety office is more pleased than chagrined when a shop master calls up, real hot under the collar, and says, "You'd better sharpen up your slide rule!" That's genuine interest, and it's a YARD WIDE!

This summer, in the Coast Guard Yard News they published two pictures. In each, a group of shop supervisors and men were standing, all smiles, under a large sign on

the outside wall of their particular shops. What do you suppose the signs said? "THIS SHOP HAS WORKED 999 CONSECUTIVE DAYS WITHOUT AN ACCIDENT." Think of it! That's three years apiece. The PAINT SHOP and the FOUNDRY were tied for first place. The figure is still mounting and three other shops are now well over the 1000 mark.

A moment ago I spoke about the supervisors coming out of the safety conference huddle and passing the word along. They do this in five minute talks to small groups, and in man-to-man chit chat while bending over the work together. We have observed, and you must have too, that careful workmanship and safety go hand in glove. In these private conversations while detailing work or inspecting it, the supervisor gets in his best licks for promoting pride of workmanship. Thus, a new helper, without the feeling that he is being preached to, in time, absorbs the idea that the right way is the safe way, and vice versa.

If I may be permitted to read your minds at this moment, I'll venture you are saying: All this is very true, and sounds fine, but how do you get the supervisors to do the job? That's if you are on the managerial end. If you are a supervisor, you are saying, That's just what I always try to do.

If I have glossed over this point, and made it sound easy, it's only because time does not permit me to go into all the details, at least those I know. But I can sum it up by saying, in its accomplishment, the safety officer, and his assistants have been truly worthy of their hire. Safety education without inspiration to keep the program vital is hammering on cold iron. Thanks to our nationwide programs, and the wealth of experience they represent, there is much instructional material available, including visual aids. We use it! Those who dare to teach or lead, must never cease to learn. We are learning that it takes a little fanfare, a touch of color, something dramatic, something humorous, and occasionally, although we hope not too often, a little blood. The widows and orphans approach carries far more appeal than the duty to save Federal funds. And the

loss of prestige in a shop where the safety enthusiasm is kept to a high pitch is a mighty deterrent to the otherwise accident happy.

If, in spite of our diligent program, the blood does run, here is how we make it work for us: The immediate supervisor, the man closest to the workman and his work, and the man in the best possible position to guard against such future occurrences, is charged with the preparation of the accident report, including his recommendations in the case. His report is reviewed, and followed up, not merely placed in the files and recorded in the statistics. The emphasis is to find the pre-accident factors, those signs which ought to indicate to the workman that an accident is about to happen. The report becomes another case to be used in the educational program. When we have developed a basic accident cause, we go after it. Sometimes it's the elimination of a hazard, but more often it is the establishment of a safe performance method at the worker level. Stress is also laid on the "human side of the news"—the personal loss and suffering. Thus presented, it is another stone from that anti-safety mountain, and its repetition is conditioning our force at all levels to watch for the warning signs which shout: ACHTUNG!

There is another important application. A man off the job because he has tumbled down his basement stairs, or was shot in a hunting accident, or hurt in a crash at the corner, is just as much off the job as if he were disabled at work. We are vitally interested in these men being here for eight hours every working day. Our program, then, must and does include the other sixteen hours and week-ends. We don't try to boss them off the job, but we offer advice on home, vacation, and traffic safety, and direct it to the home, yes, to the little woman, and the kids. No doubt you do the same. You should!

There is one primary factor which I think has more to do with our success than any other: We have management on our side in a big way! During the war, when it was necessary to think in terms of spoiled materials, disabled machines, and most of all, loss of essen-

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tial manpower, an awareness for accident prevention gradually became fixed in the minds of the higher brass. Directives were issued and coming from the highest policy makers, were right well heeded, at least on paper. Then as most of you know, the passage of the Federal Tort Claims Act after the war opened up a whole new concept of Federal responsibility. The prospective cost of damage and injury claims demanded an aggressive policy and program to keep them to the minimum.

The culmination came, when the President of the United States, no less, issued a directive to all government agencies to establish a continuing safety program. Like a tree in spring, which has been gathering sap since February, and on one warm day, bursts into bloom, so our Federal Safety Campaigns blossomed out all over at once. Our Yard was right in there, too. Management officers who had never found time to peruse the safety literature, or make any particular study of local problems, now FOUND the time. And in so doing, they learned that there was more to the problem than installing safety equipment, and warning the workmen about the consequences of not using it. They found that they could no longer sit back with folded hands and a Mona Lisa smile and say: "We've done our part, we've told them, the rest is up to the men on the job." And they learned that amid the gentle rain of safety platitudes must come a bolt of lightning and a clap of thunder to keep the air charged with expectancy. Thus, with management not only backing up the long suffering safety officer, but actually prodding him now and then, safety promotion experienced an all around rebirth, and as I mentioned before, we have made the frequency curve more than jiggle. We have dealt it such a blow, its practically on the canvas, it's down for the count, and it's staying down.

When you are sick, you like to go to a doctor of your own choice. He gets that way, probably because he makes you think he understands your problem. His pills are easier to take because he is sympathetic. Now, this safety stuff has been taunted in front of people for a

long time, a good, sensible prescription, too, but the patients refused to swallow the pills, or did so reluctantly. Lately, that is, since the change or rebirth I spoke of, the doctor, that's management, has shown sympathy; has talked not so much in terms of financial loss to the Government, the old approach, but in terms of slashed thumbs, chips in eyes, and burns down the neck. These don't belong to management. They belong to the plate handlers, the chippers, and welders. Hence, gloves, goggles, and cape sleeves have taken on new meanings. The reluctance to safety helmets began to really disappear when the split-wide-open helmet of the day before became exhibit "A" in the rigger's shop, and Charlie, badge No. 7227, appeared on the job in a brand new bonnet. Do you think he kept the news to himself? You bet your safety shoes . . . no, better not do that . . . you bet your Sunday pants he didn't. Do you think he sounded off that management was thinking only of itself? When they helped him to his feet after that eight foot section of angle iron had clunked his hard hat, his first remark was: "Boy, am I glad they MADE me wear that helmet!" The wearing of hard hats, jeered at in 1945, has become so general at our Yard, employees sometimes forget they have them on, and wear them right out through the main gate. They are conditioned to helmets.

And that is not all! Several weeks ago, a Yard pipefitter was called by a friend to do some week-end plumbing for him. He happened to be an insurance man. When the pipefitter arrived and started to work, he slipped on his goggles. "Are those safety glasses?" "Yes, they were issued to me at the Yard, where I work; they also make us wear hard hats." "Yes, I know, and they are painted different colors to indicate the different shops." "How do you know that, you've never visited the Yard, have you?" "No, but in the insurance game you hear about things like that. Most every place I go in Baltimore, someone mentions the safety program at the Yard."

The pipefitter told this story in the shop Monday morning, and was he proud of it! And so was his

supervisor, and everyone up the line. Just as an accident is a symptom of things wrong, so this kind of talk is a symptom of things right. To my mind, it is a real yardstick to measure our progress, and you must remember, I am not presently of the Yard staff, and so I'M not just tooting my own horn!

Although I have ascribed our success to the unqualified backing of management, from the President on down, as you may well understand, this is not the whole story, by any means. Time does not permit me to give individual credit to every deserving one. Just as in your own establishments our Yard is full of willing workers—some are willing to work, and others are willing to let them. As I have already mentioned, two of those who are willing to work are the safety officer and his safety engineer. You would probably have to ask his wife to find out, but it is important to know if your safety director is one who greets the dawn with, "Good God, morning" or if he bounces out amid the singing of the birds with, "Good morning, God!" What I'm trying to say is, he must be bursting with enthusiasm if he is to really succeed at his job. Cowper perfectly described the ideal safety man when he wrote, "No wild enthusiast ever yet could rest till half mankind were, like himself, possessed." If his shoes wear out faster than his pants' seat, your frequency curve slopes downward the same as ours does.

And if it does that means he has had help from all of you. Nor can we expect him to do it all alone. There's a lot of wild water to be stemmed. It's like building a dike. First some good substantial barriers are placed—that's you supervisors. He loads you with rocks and mattresses of rules and instructional material. If you just store them, a lot of water will still get by. But if you will watch your chances and drop or swing them into place at the right time, eventually you will close the gaps between you, and collectively you will present a solid front for safety. But don't relax! Don't go to sleep on the job! You can't depend upon your dreams to help very much—oh, maybe a little bit, but if so, the first step in mak-

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ing dreams come true is to: WAKE UP! Edmund Burke said, "All that is necessary for the triumph of evil is that good men do nothing." You've got to expect a leak in the dike now and then, and have that thumb ready!

In all we do, we must: SET THE EXAMPLE. Example must follow precept or our voicing of the safety message is so much idle chatter, and don't think it won't be so recognized by others! We judge ourselves by what WE feel CAPABLE of doing. Others judge us by what we do—and by less substantial standards. Nothing undermines confidence like: "Do as I say and not as I do." If you are a "super duper" supervisor, when may this rule be violated? NEVER!

From time to time I have given my four children instructions in the dangers of firearms, and have tried to combat the radio and the comic strips free use of violence. However, on my youngest son's ninth birthday he was given a toy pistol, a very realistic one, holster and all. He insisted on wearing it to the table. The table had just been cleared of the supper dishes, and we were in the pause which awaited the arrival of the birthday cake. All of a sudden, he whipped out the pistol and drew a bead on me. I said, "Chip, you pointed that gun straight at my eye." Quick as a flash he came back, "I did not, you must have looked straight down the barrel!"

Shop supervisors, and as often, the workmen, frequently find themselves looking straight down the barrel over which the safety director sights. In our YARD, it's to their eternal credit that somehow they manage to reconcile their differences without wrecking the safety program. Because of this, realism in the shop nearly parallels the idealism in the front office. Management, the safety director, the shop masters, the snappers, and the workmen are being conditioned to work as a team, a safety team, and we hope we can continue the leadership, now get that point, for it is really the whole point of my talk, *the leadership necessary to keep it that way!*

Yes, we have achieved a truly integrated program. It starts at the top and extends to the very bottom

man. It includes the old timers and the newcomers. It covers the store-rooms, the roads, the shops, and it covers the waterfront! I have mentioned it several times as a YARD-WIDE program. "All wool and a Yard Wide," best describes it, and I am glad to have been able to share a piece of this good goods with you. If our methods will work for us, might it just not be, that, with a little modification here and there, they will also work for you? After all, as I said at the beginning, we have about the same kinds of problems, and the same kinds of people, and certainly, the same goals to work for. No management program today is complete unless it includes proper emphasis for safety. Here's to your 1.9 or better!

Martin Enters Nuclear Power Field

The entrance of Martin Aircraft into the field of nuclear power development was officially announced today with the news that the Company has established a separate Nuclear Division.

Tibor F. Nagey, manager of the new division, said efforts will be directed towards making Martin a "major supplier of portable nuclear power equipment for the military services."

The Company, he said, plans to develop nuclear reactors and related components for military, industrial, and commercial use. These reactors, fueling and operation of which would be subject to Government approval, would convert nuclear energy into energy useful for electric generation, propulsion, industrial processes, and specialized research.

One important military use of nuclear power equipment, Mr. Nagey points out, is for invading troops landing on enemy shores near cities whose power supply has been cut off. Portable nuclear power equipment which can be transported by air must be developed to meet these conditions, he said.

With the establishment of the new division, Martin has set up a manufacturing organization and nuclear laboratory to handle the complex and diversified problems in-

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volved in insuring the safe control of nuclear energy in power conversion. In addition, the laboratory will devote attention to the application of radio isotopes to manufacturing processes, and conduct studies on the use of special metals at high temperatures and elevated pressures.

Work already under way on reactor components includes development and fabrication of heat exchangers, and studies on the nuclear applications of stainless steel honeycomb developments.

Key managers in the new division are men young in years. Mr. Nagey, at 32, is a native of Hungary and a graduate of the Case Institute of Technology. He formerly served as a project engineer with the National Advisory Committee for Aeronautics in Cleveland, Ohio, where he conducted analytical studies and experimental investigations in the fields of thermodynamics and nuclear energy.

Dr. Robert Spooner, 34 has been named manager of nuclear research & development.

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Index to Advertisers

Big Joe Manufacturing Company..... Second Cover

A complete line of more than 40 lift trucks designed especially for your needs. Big Joe's DrumToter attachment, easily and quickly installed, and removed in minutes, makes movement of drums an easy task.

Blackhawk Hotels..... Page 43

Noted for their excellent service and matchless cuisine, the Mississippi, Davenport and Blackhawk hotels in Davenport, Iowa, the Saint Paul and Lowry in St. Paul, Minnesota, and Hotel Jefferson in Peoria, Illinois, are popular with services personnel traveling thru the Midwest.

Buckingham Transportation, Inc..... Fourth Cover

This safety-conscious motor carrier has hung up some enviable safety records, collected a lot of awards, and keeps its fleet rolling over the highways of South Dakota, Nebraska, Wyoming, Minnesota, Montana and Colorado meeting commitments of an ever-increasing business.

Economy Engineering Company..... Page 1

Engineered and designed Hi-reach telescoper platforms available in standard models from 10'-9" to 35' with custom-built units to 100 feet. Maximum stability, safety and smooth, time-saving lift action, are yours when this equipment is in use.

Evinrude Motors..... Page 4

For many years a leader in the outboard motor field, Evinrude Motors now offers the quiet outboard motor for a relaxed, pleasurable sportsman's outing.

Manning Bachrodt Chevrolet..... Page 41

Offers discount on '55 Chevrolets to returning servicemen. This big Illinois dealer also offers accessories at a savings of twenty-five per cent.

Marvel Industries, Inc..... Page 47

The makers of Lift-O-Matic, power truck attachments, offer you economy in drum handling with equipment fitting any truck. Operating simply, without pallets, it has automatic pick-up and release, without additional operator controls.

Minifon

A pocket-sized recorder that will take dictation, notes, on-the-spot interviews, as well as many other functions, is a natural for busy executives—it eliminates written reports! With recording fully controllable, this compact product of Geiss-America will record for 2½ hours.

Purity Mills, Incorporated..... Page 29

Offers direct to Commissary and Exchange Officers a guaranteed popcorn, with a business-getting premium deal.

Richcraft Company..... Page 1

Richcraft 65, pre-treated with special fungicide is easy to lay and inspect. A cost-saving membrane for under concrete slab and over crawl space where slab is not poured on the ground. Comes in 3, 4, 5, 6, 7 and 8 ft. widths.

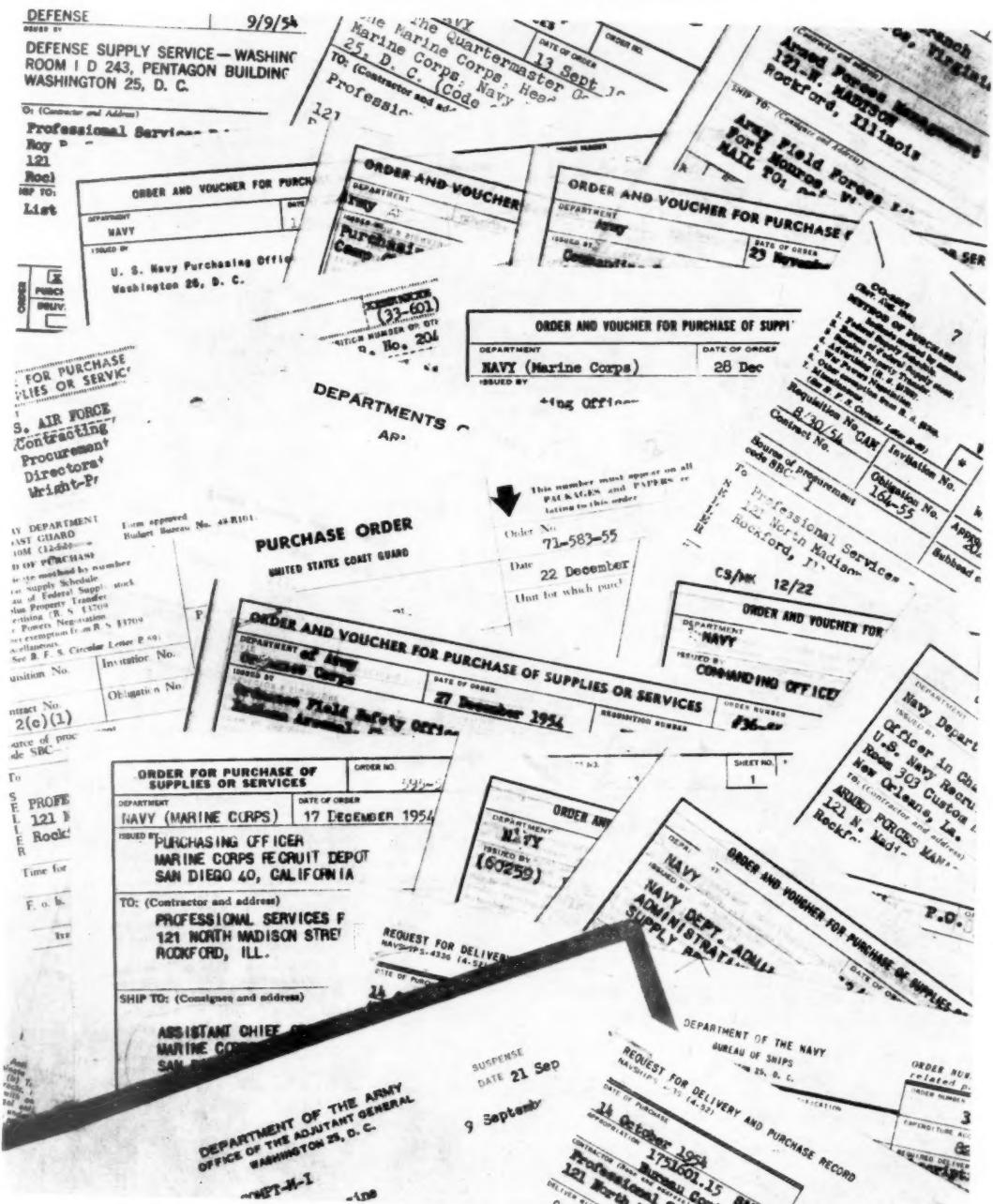
Richmont, Incorporated..... Page 1

"The Home of Torque" in Monrovia, California, places on the market the new heavy duty Livermont Torque wrench, safer, lightweight, more accurate, faster to use.

Williamson Motor Company..... Page 40

One of the better Ford dealers in Northern Illinois offers discount on the new '55 cars to returning servicemen.

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